

FLIGHT

The
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ENGINEER
&
AIRSHIPS

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"FLIGHT" PHOTOGRAPHS

To those desirous of obtaining copies of "Flight" Photographs, these can be supplied, enlarged or otherwise upon application to Photo. Department, 36, Great Queen Street, W.C.2.

For Prices and Sizes, see Advert. on page iii.

DIARY OF CURRENT AND FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list—

1928

- Nov. 1... Lecture, "Testing of Adhesives for Timber," by W. D. Douglas, before R.Ae.S.
- Nov. 8... Lecture, "Machinery Installation of R.101," by Wing Com. T. R. Cave-Browne-Cave, before R.Ae.S.
- Nov. 15... Lecture, "Aeroplane Engines in Flight," by R. J. Penn, before R.Ae.S.
- Nov. 22... Lecture, "Weight of Aircraft," by Maj. T. M. Barlow, before R.Ae.S.
- Nov. 29... Lecture, "Production Problems," by F. Sigrist, before R.Ae.S.
- Dec. 3-8... International Aeronautical Exhibition, Chicago, Ill.

EDITORIAL COMMENT



It appears that at long last we are really going to take Empire air routes seriously, and to begin to make proper use of the one type of aircraft which will, in the future, be of greater value to the British Empire than to any other nation in the world: the flying boat.

It is announced that an Imperial Airways survey party will leave England during the early part of this month to examine and choose bases for the Mediterranean section of the projected route to India. Hitherto, the only tangible expression of interest in the flying boat on the part of Imperial Airways has been the Southampton-Channel Island service, and it was feared in many quarters that the new Short "Calcutta" flying boats might be put to no better purpose than flying over this route, which is of little consequence and ill-suited to serious development.

The announcement that the Mediterranean section—from Genoa to Egypt—is to be operated by flying boats, and that it is hoped to open the service, a weekly one in each direction, in April of next year, will be welcomed by all who believe that the great future of British aviation lies in long Empire routes.

The survey party will, it is understood, select certain intermediate sites, the main points of the Mediterranean route having already been chosen. From Genoa the flying boats will call at Rome and Naples, but at present no definite choice of route has been made thence onward to Crete, where Suda Bay has been chosen as the base. From Crete the route will, in order to shorten the passage over the sea, go straight across to the African coast, and then along the coast to Alexandria, there to connect up with the existing Cairo-Basra service.

It is estimated that the trip from London to Karachi, when the whole route is in operation, will be accomplished in something like a week. The success of the trans-desert service has conclusively proved that there is a need for speeding up communications, and the new "link" in the chain cannot but give a great impetus to the further development of the air route which will one day join London to

India and Australia. That the flying boat is at last to be given an opportunity to prove its worth gives cause for satisfaction, and we have not the slightest doubt that the "Jupiter"-engined Short "Calcuttas" will prove themselves thoroughly equal to the task demanded of them.

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Municipal Aerodromes

A circular has recently been sent by the Air Ministry to local authorities, urging them to establish municipal aerodromes at the earliest possible moment, pointing out not only that delay may mean suitable existing sites being built over, but that the price of such land may rapidly become prohibitive.

As the circular very rightly states, the development of internal flying is almost entirely dependent on the provision of aerodromes near large centres, and until such centres are established, the business man in the provinces cannot make full use of the advantages which the air lines operating from Croydon have to offer. After all, London is not the whole of England, a fact which sometimes appears to be overlooked, and when Karachi is brought within seven days or so of London by the opening of the London-Egypt air service next year, the saving in time between England and India and Australia will be such as to make the use of the air service very well worth while. But until better facilities exist for connecting provincial cities with Croydon, a large percentage of the potential use by the whole country of air services is likely to be lost.

How far the Air Ministry circular to town clerks is likely to influence provincial cities and towns in their decision to establish municipal aerodromes is an unknown quantity. Something more than the statistics of the cross-Channel services will obviously be required. The provincial business man will want to have explained to him exactly what advantages he can count upon by using air transport, and generalities will not convince him.

If he is doing business with a certain town, he is interested in knowing to what extent he is likely to benefit by using the air service to that town, but not the least interested in what the conditions are of a service to some other place. Definite and specific information is what is required, and that the Air Ministry circular does not give. We have not the slightest doubt that upon application the Air Ministry will help with all manner of information, but the great point is that the information should be volunteered. We think that here is an opening for the Air League of the British Empire to work energetically.

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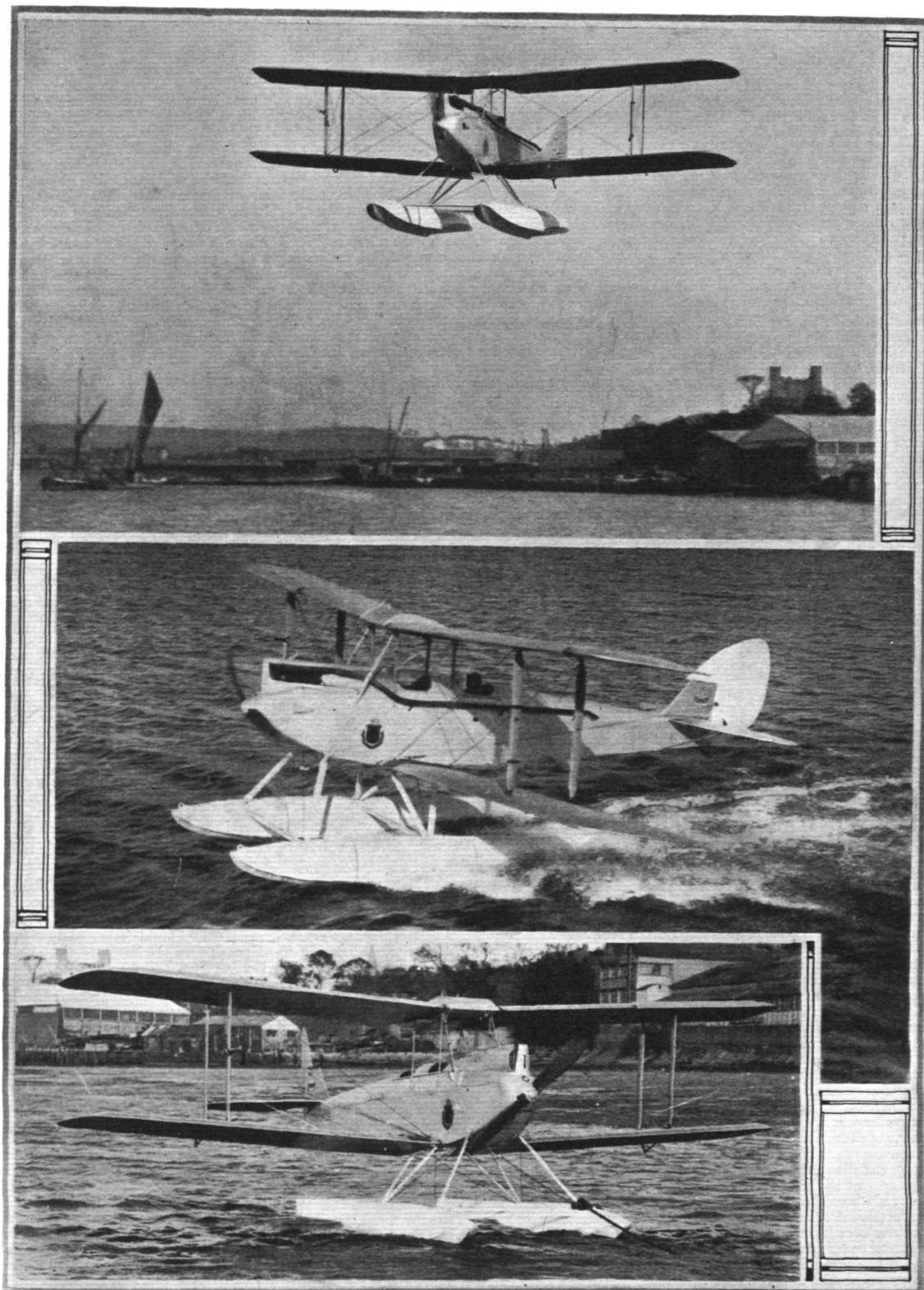
The Small Flying Boat

The number of low-power seaplanes in use in this country and in the Dominions is rapidly increasing, and these little twin-float machines are giving excellent service. Col. Sempill's flight recently across the North Sea to Holland, Hamburg and Berlin on a Blackburn "Bluebird" demonstrated what can be done with a seaplane of low power. But the twin-float seaplane is not necessarily the only type worth developing. The small flying boat has many points in its favour. The single-engined, twin-float machine is a little difficult to handle when it comes to picking up or casting off moorings unassisted, and here the flying-boat type would appear to offer advantages.

It might be advisable, in order to get really good manoeuvrability on the water, to design the small flying boat as a twin-engined machine. This would have the double advantage of giving more power than the existing small types, and at the same time permit rapid turning, as well as ease of coming up to a buoy. Probably it would be wise to make such a machine a three-seater, and with two of the existing engines the power would be sufficient for that. We feel sure that a ready market would be found, both at home and in the Dominions, for such a type. Who will produce it?



["FLIGHT" Photograph
"EXAMPLE BETTER THAN PRECEPT": This photograph, taken from another aeroplane, shows the Director of Civil Aviation, Sir Sefton Brancker, piloting his de Havilland "Cirrus-Moth" "D.C.A."



[“FLIGHT” Photographs]
A “MOTH” SEAPLANE FOR SARAWAK: These three views show the first de Havilland “Gipsy Moth” to be fitted with floats. The machine has been ordered by the Sarawak (Borneo) Government. The Duralumin floats were built by Short Brothers, off whose works the machine is seen flying. The pilot was Capt. Hubert Broad.

THE WESTLAND "WIZARD"

Rolls-Royce F.XI Engine

AMONG the new single-seater fighters which made their first public appearance at the Royal Air Force Display at Hendon last summer was the Westland "Wizard," which attracted a great deal of attention, not only because it was by way of being a *rara avis* among British service types of aircraft on account of its monoplane wing arrangement, but also by virtue of its exceptionally "clean" lines and generally attractive appearance. It has now become possible to describe this machine in some detail, and to illustrate it not only by photographs but also by three-view drawings.

In producing a service type of aircraft, the designer is faced with a number of problems other than the usual aerodynamic and structural ones. He has to bear in mind, first and foremost, service requirements such as view, gun accessibility, the placing of service equipment, &c., and while meeting all these, he still has to produce a machine with the highest possible performance, coupled with manoeuvrability, stability and controllability. One might easily add other "ilities," among which has, for instance, been added recently repairability in the field. Thus the production of a modern service type for the R.A.F. is largely an "ilities competition,"

speed, where induced drag is not a large percentage. By having a monoplane wing, and making that of fairly thick section, it has been possible to "bury" the petrol tanks in the wings, thereby saving fuselage space without adding appreciably to the wing drag, while retaining the advantages of direct gravity feed and reduction in fire risks. The general arrangement drawings and photographs of the "Wizard" show that the fuselage is of very small cross-sectional area and of good streamline form, while the placing of the wing some distance above the rounded top of the fuselage has probably reduced interference drag to a fairly small figure. It should be remembered that the Westland Aircraft Works have their own wind tunnel, and that probably experiments were carried out to determine the effect of the wing arrangement chosen. Altogether the design impresses one as being particularly "clean," and the performance figures given at the end of these notes indicate that the minimum drag of the machine must be very low.

Constructional Features

With the exception of the wing, which is of wood in the



THE WESTLAND "WIZARD" SINGLE SEATER FIGHTER: Side View. Note the neat cowling of the Rolls-Royce F.XI engine.

and many a designer has failed to get his machine accepted not because its performance was inferior to that of other types in the same class, but because one of the "ilities" was not as good as the corresponding one of another machine.

In the Westland "Wizard" single-seater fighter the designers have given expression to original ideas, inasmuch as the machine deviates considerably from what has almost come to be regarded as standard practice in single-seater fighter design in Great Britain. The parasol monoplane arrangement has not been in service with the Royal Air Force since the days of the war when a number of Morane-Saulnier "parasols" were used. Since then all service machines of the single-seater fighter class have been biplanes, or at most "sesquiplanes." How far the Westland designers have been influenced in their choice of wing arrangement by their experience with the "Widgeon" light monoplane we cannot say. At least there is quite a strong "family resemblance" between the "Wizard" and the "Widgeon." It seems likely that the monoplane wing arrangement was chosen chiefly on account of the view, which must be quite exceptionally good in the absence of a bottom wing, and with the pilot placed as he is with his eyes on a level with the trailing edge.

Structurally also the wing arrangement of the "Wizard" must have its advantages in that the rigid rigging of the strut-braced monoplane wing should not require any trueing-up during normal use. The only external wires in the "Wizard" are those in the plane of the wing struts, and as the stresses in them must be quite low, they are not likely to require much attention.

Aerodynamically there is possibly very little to choose between the monoplane and the biplane wing arrangements, especially in a machine with very low power loading and high

first machine but will be of metal in subsequent aircraft, the "Wizard" is of all-metal construction. The fuselage is built up of metal tubing mainly of square section, and chiefly of Duralumin, although certain highly stressed members are of steel. In the front portion of the fuselage the struts are arranged to provide the bracing, being in the form of a Warren truss, while in the rear part the bracing is provided by swaged tie rods. The fuselage is in two separate portions, the joint occurring just aft of the pilot's cockpit. The struts in the rear portion of the fuselage are circular-section Duralumin tubes, and fit into "cup" sockets at their ends. These "cup" sockets are attached to the longerons by a single bolt, so that the longeron is pierced but twice at each transverse frame—once vertically and once horizontally.

In the front portion of the fuselage the attachment of the square-section struts to the square-section longerons is by flat flitch plates and tubular rivets, the struts not bedding down on the longerons, but the bearings being provided by the tubular rivets, which are made of sufficient area for the purpose.

The engine mounting is so designed that after removing the cowling, the engine can be lifted out without disturbing the fuselage structure proper. In designing the mounting, the possibility of fitting a supercharged engine has been kept in mind, and the addition of a supercharger to the Rolls-Royce F.XI engine will entail no structural alterations of the "Wizard."

As already mentioned, the wing of the "Wizard" is of normal wood construction in the first machine, but subsequent models will have all-metal wings, about the details of which, however, we are not in a position to give any information. The wing bracing struts are of steel, and incorporate certain



THE WESTLAND "WIZARD" SINGLE SEATER FIGHTER: Three-quarter rear view.

patented features in their construction. They run from the lower longerons to the two wing spars, and are approximately parallel, so that bracing wires in the plane of the struts have been employed. The ailerons are hinged to "false" spars, and are of narrower chord at the root than at the tip. They are balanced by shielded horn balances and have been found very effective and light on the controls.

The undercarriage is of normal type, with axle running across and the rear leg of each Vee being the telescopic member. The shock-absorbing gear in the "Wizard" is of the well-known Westland type, using a medium-pressure air chamber and oil dashpot with tapering needle valve.

A tailplane trimming gear of somewhat unusual type is fitted. This is operated by a lever with ratchet stop, and is claimed to be much quicker in operation than the worm-wheel type.

The two petrol tanks, each with a capacity of 34 galls. (155 litres), are mounted in the wing, and the removal of the tanks is very simple as the bolts for the securing clamps are exposed on top and bottom of the wing, so that all that is

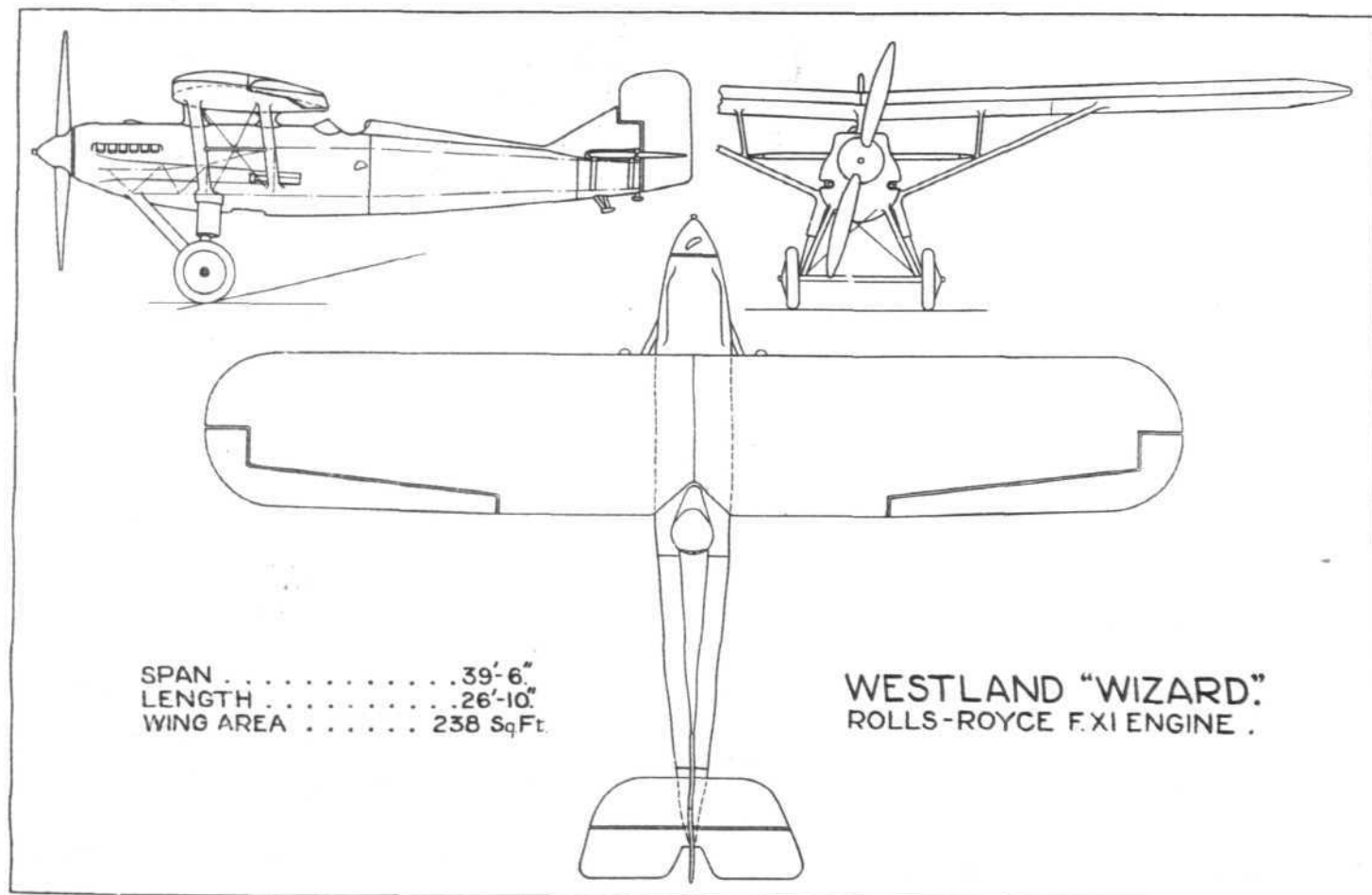
necessary is to undo the nuts, when the tanks can be dropped out. Direct-gravity feed to the engine is used.

The radiator is of the retractable type, and projects when in the "out" position through the floor of the fuselage just behind the rear undercarriage struts. It has been found that this position has the double advantage of offering a minimum of drag and at the same time keeping the pilot's cockpit well heated.

The "Office"

The pilot's cockpit is placed approximately in line with the trailing edge of the wing, and the seat is of such a height that the pilot's eyes are about level with the wing, enabling him to look either over or under the wing. The seat height is adjustable on the ground, and there are two positions of the rudder bar to suit different pilots.

The two machine guns, one on each side, are placed with their feed and locks inside the cockpit and within easy reach, so that in the event of jamming or other non-functioning of the guns, the pilot can see and reach the locks and operating mechanism of both guns without difficulty.



THE WESTLAND "WIZARD" SINGLE SEATER FIGHTER: General arrangement drawings.

Armament

The armament consists of two Vicker's guns (0.303-inch), with twin C.C. gears, Aldis sight (interchangeable with ring and bead), and four 20-lb. bombs. In addition, the machine also carries a wireless transmitting and receiving set.

Main Dimensions and Weights

Length overall	26 ft. 10 ins. (8.20 m.)
Wing span	39 ft. 6 ins. (12.05 m.)
Wing chord	6 ft. 5 ins. (1.95 m.)
Height overall	9 ft. 4 ins. (2.83 m.)
Wheel track	5 ft. 6 ins. (1.68 m.)

Total wing area	238 sq. ft. (22.1 sq. m.)
Tare weight (including fixed equipment and water)	2,467 lbs. (1,120 kgs.)
Gross weight	3,326 lbs. (1,510 kgs.)
Petrol capacity	68 gallons (310 litres)
Oil capacity	5 gallons (22.7 litres)
Duration	1 hr. at ground level plus 2 1/2 hrs. at 15,000 ft. (4,570 m.) with supercharged engine
Speed at 10,000 ft. (3,050 m.)	188 m.p.h. (303 kms./h.)
Rate of climb at 10,000 ft.	1,945 ft./min. (9.88 m. per sec.)

AIR MAIL TO DUTCH EAST INDIES

FOR many years Holland has been striving to establish an air service to the East Indies.

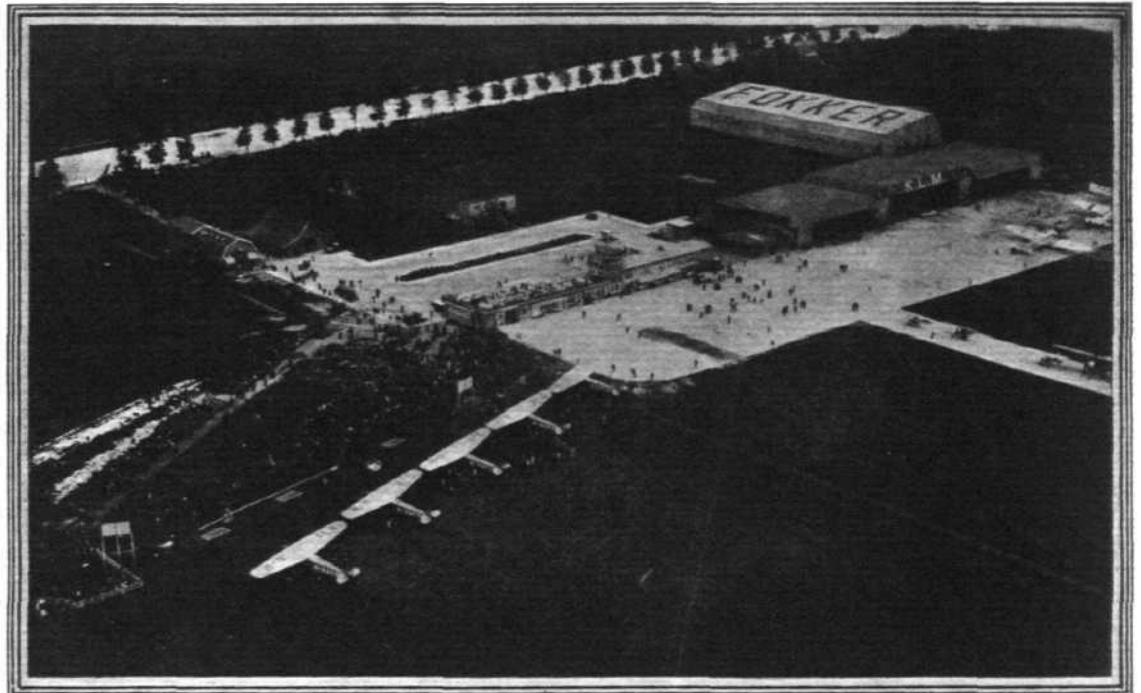
When Captain Koppen took off in a three-engined Fokker F. VII, on October 1, 1927, to arrive at Batavia on the 10th of the same month, then left there on the 17th, and arrived back in Holland on October 28, thereby completing the first official mail flight with a considerable quantity of letters, etc., the time was ripe to consider regular experimental flights.

In the East Indies, a committee had meanwhile been

of the five in the Indies, where they will be used on the new airways. The fifth machine is to fly back to Holland, thereby making the first link in the new chain which is to connect the Colonies with the Motherland when the regular air mail service is established in January.

On September 13, Captain Koppen left Amsterdam with the first machine. On September 18, he reached Karachi in India, and on September 23 was at Medan in the East Indies, from where he proceeded in short stages in order to deliver

The five Fokker
monoplanes fitted
with Armstrong-
Siddeley "Lynx"
engines lined up
at Amsterdam
before inaugura-
ting the air mail
service from Hol-
land to the Dutch
East Indies



formed to make preparations for founding an Indian Airways Company, and Koppen's successful flight contributed more than a little to making a success of the visit of the manager of the K.L.M.

On September 12 last, five Fokker F. VII-3m Armstrong-Siddeley "Lynx," specially built for airways to and in the tropics, lined up at Amsterdam for departure to the East Indies.

It was proposed to fly them from Holland to the Dutch East Indies as an experimental service, and to leave four

mails. On September 24, he reached Palembang, on September 25 touched Batavia and finished his flight at Bandoeng the same day. This machine carried 608 lbs. (ca. 276 kg.) of mails, a crew of three and also a passenger.

The second machine left on September 20, carrying about 400 lbs. (ca. 180 kg.) of mails and reached Akyab on September 27, from whence it continued its flight eastwards. The third machine started on September 27, and reached Budapest on the same day. A fourth machine, piloted by M. Schott, is delayed at Rangoon.

Air Commodore Samson

As from October 1 last, Air Commodore C. R. Samson has been restored to full pay. Last September he was placed on half-pay pending, it was thought, a suitable Air Force vacancy for him to fill.

A Good Present

To commemorate the first flight over the Tasman Sea by Capt. Kingsford Smith and Mr. Ulm in the "Southern Cross" monoplane, the *New Zealand Herald* has presented to the new Auckland Aero Club a D.H. "Moth."

Coach and Air Combined Services

IMPERIAL AIRWAYS have now arranged through bookings to Paris with their air lines and motor-coach services from the North of England.

Review

AMONGST private magazines, the *Cranwell Cadet College Magazine* maintains a very high standard of production. Issued quarterly, it covers the periods accordingly with interest to all at Cranwell, and all those who have passed through to active service. An affectionate watch is kept on the careers of Cranwell men wherever they may be. But any follower of aviation can peruse the magazine with interest. In the autumn issue, recently published, there is an account of Capt. Hinchliffe's preparation at Cranwell for his attempt on the Atlantic early this year. Humour finds ready favour with the editors, and it hits the mark in a skit on Atlantic flights, and also in the excellent illustrations of the Roman Theatre at Amman.

GRAF ZEPPELIN'S RETURN FLIGHT

A RATHER unexpected departure on the return flight across the Atlantic (with a stowaway on board) was commenced on October 29, at 6.55 a.m. (G.M.T.) by the *Graf Zeppelin* commanded by Dr. Hugo Eckener. Fine weather gave promise before anticipated and this was the reason of the sudden start. Bright moonlight shone and the wind was westerly. In two hours the airship cruised over New York which was then 3 a.m. to that city and an hour of repose. Long Island was skirted and the coast crossed near Great Point, Nantucket, the course seawards then being south-east. When 90 miles south-west of Cape Sable, Nova Scotia, the liner *Laconia* was passed at 3.15 p.m. (G.M.T.), and the *American Trader* also sighted the airship 500 miles east of Boston, when strong north-easterly winds were blowing and rain was falling, whilst the course was still south-east. At Newfoundland the *Zeppelin* was sighted over Northern Bight at about midnight flying low and steering east, prevailing conditions then being favourable and the winds strong from the south-west.

A wireless message from the airship on October 30 reported its position as 600 miles east of Cape Race, Newfoundland, at 1.30 p.m. It was steering a south-easterly course and the weather was unfavourable for the northerly route. The Dutch steamer *Westerdyk* wirelessed having passed the airship at midnight 560 miles west of the south-west point on the Irish coast when it was following a south-east course. At 11.21 a.m. on October 31 it was over the Bay of Biscay. It was expected to reach Friedrichshafen between 6 p.m. and 10 p.m., October 31.

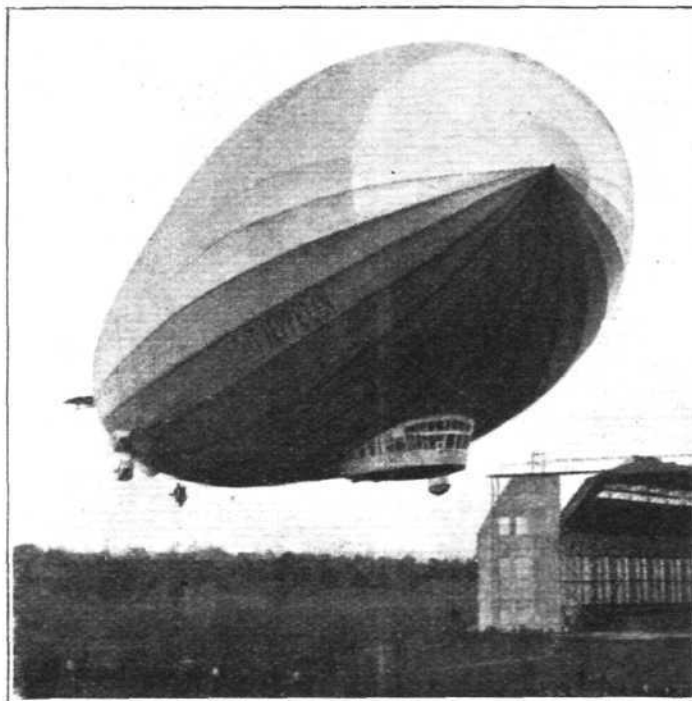
There are 23 passengers on board and a crew of 40. The only lady passenger is Mrs. C. Adams, and the load includes 32 mail bags and four special consignments each weighing 34 lbs.

The *Count Zeppelin* is the 118th dirigible constructed by the Zeppelin Company. This latest type is a logical continuation of a long series which commenced with L.Z.I, built in 1900. It differs very little from preceding types, although it is the largest constructed by the Zeppelin Company and reaches the limit of the capacity of the hangars. In length it is 775 ft. the maximum diameter is 100 ft., and its volume is 3,708,600 cub. ft. The useful load for a range of about 6,000 miles is 14 tons. There are 2,649,000 cub. ft. of hydrogen gas contained in 17 divisions in the upper area of the airship and 1,059,600 cub. ft. of "blaugas" for the engines contained in 12 divisions in the lower area. Top speed is 80 m.p.h. and cruising speed with 2,150 h.p. is 72 m.p.h. Total horsepower is 2,650.

Involved in the length and breadth of the airship are about 30 tons of light metal and 22,800 yards of cable and piano cord. There are five Maybach engines, each of 550 h.p. They are of direct drive and placed in three cars, and run on a gas or liquid fuel. During the outward flight a carburetted mixture of hydrogen was used. It was mentioned that for the

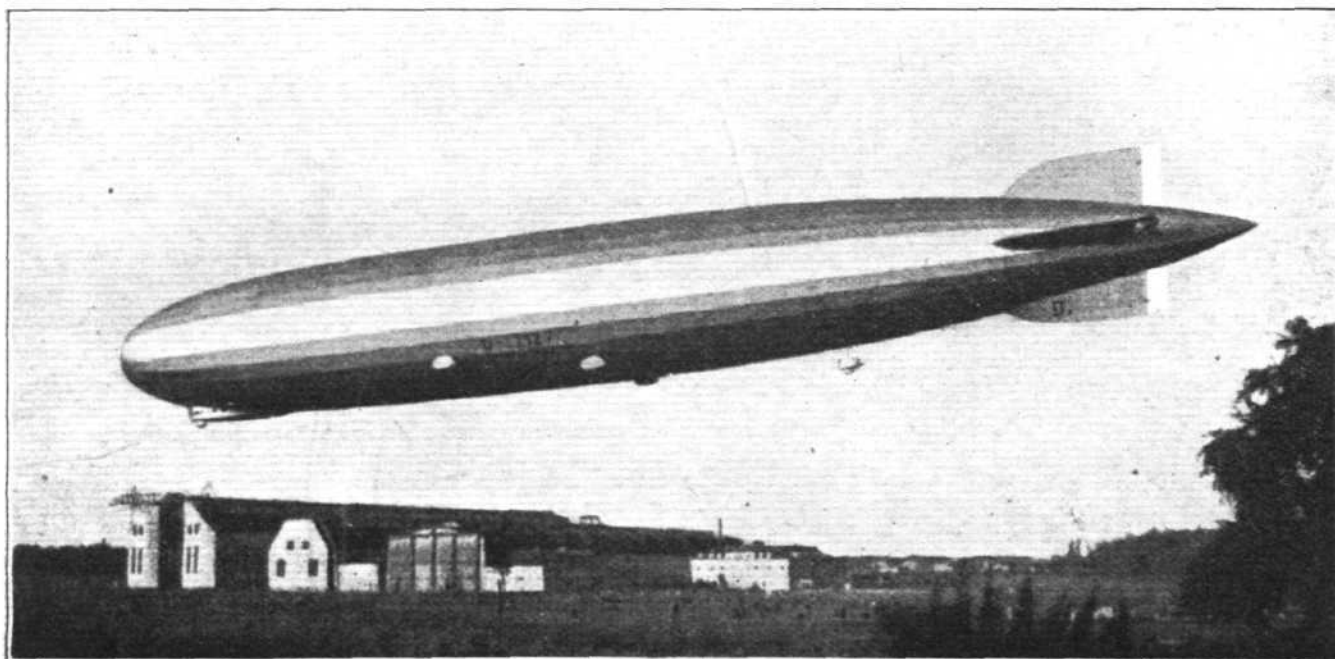
return trip Dr. Eckener thought of replacing the "blaugas" for a natural gas found in Kentucky which had been conveyed to Lakehurst.

More precise and rational methods of calculation have permitted the utility of a new light metal having a strength 20 per cent. greater than that of duralumin at an equivalent density. There are 17 bays in polygon form, with 28 arcs linked to 28 longitudinals running the whole length of the airship, and the hull is slightly "fatter" than in previous types.



Another view of the LZ.127 Zeppelin airship.

The power for heating, cooking and illumination in the airship is electricity generated from wind-driven generators and engines. There is a lounge and dining room and ten cabins, each containing two bunks. The *Graf Zeppelin* is a little longer than our own airships R.101 and R.100, now under construction, but about 30 ft. less in diameter. The useful load of 14 tons is about equally shared by all three, and so is the top speed, although the total horse-power of the British ships is considerably in excess. Also their volume is each over 1,000,000 cub. ft. greater.



THE "GRAF ZEPPELIN": LZ.127, which recently flew from Germany to America.



(Continued from page 936)

LACK of space prevented us from including in last week's issue a number of light 'planes exhibited at Berlin. In order to complete our review of the exhibition, which is now closed, we continue in this week's issue with brief descriptions of the remaining light 'planes, and of certain machines which were not, strictly speaking, commercial types, nor frankly military, although in many cases nearer the latter than the former.

The Stampe and Vertongen Light 'Plane

Circumstances over which we have no control prevent us from giving data relating to the only Belgian light 'plane shown at Berlin. This machine, a little parasol monoplane two-seater, arrived several days after the opening of the show, and when it did put in an appearance it was not in the form in which it had left Belgium. This was due to the fact that, owing to head winds, the machine had to alight in the dark

parallel. As there was no wire bracing in the plane of the struts, the task of retaining the wing always at right angles to the fuselage centre line (as seen in plan view) would have to be performed entirely by the small *cabanes* above the fuselage, and it seems likely that a certain amount of "play" must be present. Possibly, however, this is not sufficient to be of any great importance.

The machine was of normal design and construction, and was stated to be extremely stable, also beyond the stall. The engine fitted was one of the Renard radial air cooled, the first of which to come under our notice were fitted in the Belgian light 'planes which took part in the Rotterdam meeting last summer.

The Czech Light 'Planes

Of the two machines exhibited by the Avia firm of Prague, one was the familiar type B.H. 11, a low-wing strut-braced

The Stampe and
 Vertongen light
 monoplane, with
 Renard engine,
 was exhibited at
 Berlin with a
 "jury" under-
 carriage, its own
 having been
 damaged in a
 night landing.

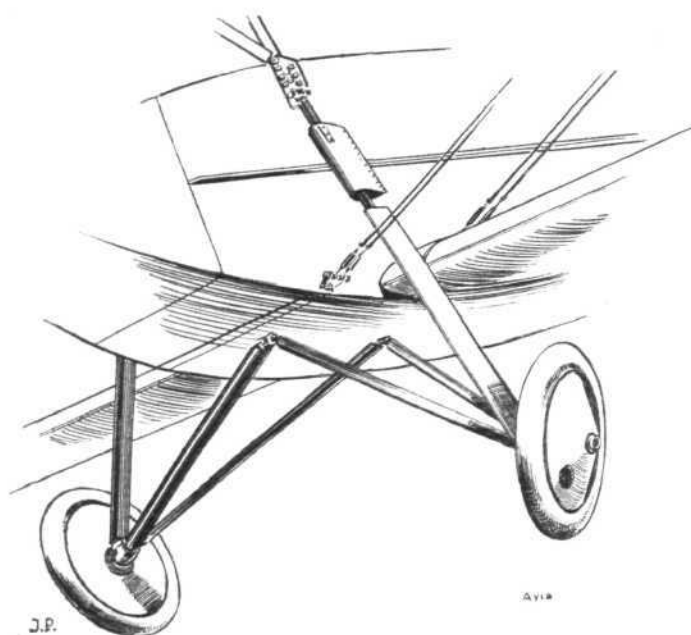


on its way to Berlin, and in so doing damaged its undercarriage. At the I.L.A., therefore, it had an undercarriage which did not belong to it, and which was of somewhat old-fashioned type. This was explained to us by the Belgian representative of the stand, but it is to be feared that many visitors, unaware of the fact, received a less favourable impression of the machine than they would have done had it been shown with its proper undercarriage. Unfortunately, no data were available relating to the Belgian light 'plane, beyond the fact that it was designed and built by Stampe and Vertongen, and that the price was £600.

The machine was somewhat like the Westland "Widgeon" in general appearance, with a parasol monoplane wing, strut-braced to the fuselage. The struts, however, did not meet at a point on the fuselage as in the "Widgeon," but were

two-seater monoplane with 60 h.p. Walter radial air-cooled engine. This machine has been in production for a number of years, and is already well known to our readers. It is mainly of wood construction, and simplicity is the keynote of its design. The main dimensions are: Length o.a., 6.64 m. (22 ft.); wing span, 9.8 m. (32.1 ft.); width folded, 2.9 m. (9.5 ft.); height, 2.6 m. (8.5 ft.).

The weight empty is 360 kg. (792 lbs.), and the normal load consists of pilot and passenger 160 kg. (352 lbs.); petrol, 60 kg. (132 lbs.); oil, 6 kg. (13.2 lbs.). Normal loaded weight, 586 kg. (1,289.2 lbs.). If it is desired to use the machine for longer distances, the fuel and oil can be increased to 80 kg. (176 lbs.), and 10 kg. (22 lbs.) respectively, while luggage, etc., to the weight of 24 kg. (53 lbs.) can be carried, bringing the total loaded weight up to 634 kg. (1,400 lbs.). The machine



["FLIGHT" Sketch]

A "Worm's Eye View" of the undercarriage of the Avia light biplane.

is stressed for airworthiness (aerobatics) up to 670 kg. (1,475 lbs.), and for normal flying up to 860 kg. (1,890 lbs.). The following performance figures relate to normal weight, i.e., 586 kg. (1,290 lbs.): maximum speed, 160 km./h. (100 m.p.h.); cruising speed, 135 km./h. (84 m.p.h.); landing speed, 65 km./h. (40 m.p.h.). Climb to 2,000 m. (6,560 ft.) in 15 minutes. Ceiling, 3,000 m. (9,850 ft.).

The Avia B.H. 29 is a two-seater biplane designed for elementary training, and may be fitted either with the 85 h.p. or the 120 h.p. Walter engine. Robust construction is, perhaps, the outstanding characteristic of this machine, but the aerodynamic qualities are claimed to be good also, not especially in the matter of "performance" in the usual sense of the word, which is scarcely necessary in a school machine, but in controllability, stability and freedom from vices such as falling into a spin when stalled.

The Avia B.H. 29 is a heavily staggered single-bay biplane, with its top wing of rather shorter span than the lower. Doubtless this has been done in order to reduce end loads in the spars of the upper plane, and to strengthen the top wing, ply-wood covering is used for this, although the lower wing is fabric covered.

The flat-sided fuselage is of the construction used by the Avia firm for years: four longerons connected by a number of formers, and covered with ply-wood. The wings are also of wood construction, with box spars having spruce flanges and ply-wood webs. The external bracing is of the usual single-bay type, with N struts of welded steel tube of streamline section. Adjustment is provided on the N struts for altering, within limits, the angle of incidence of the wings. Ailerons of normal wood construction are provided on the lower wing only, and are operated by rods and crank levers, no cables being used.

In order to reduce the number of spares, the tail has been so designed that the rudder is identical with the elevator flaps, with which it can be interchanged. The tail surfaces are of welded steel tube construction, and wire braced.

The machine being intended for school work, a common cockpit accommodates pilot and pupil, which arrangement is claimed to facilitate instruction. The pupil normally occupies the front seat, and dual controls are fitted, which can be thrown out of gear instantly by the instructor should the pupil make a mistake under dangerous circumstances.

The undercarriage of the B.H. 29 is of the "split" type, with the axles and radius rods hinged under the centre line of the fuselage floor, and the telescopic struts running to the top longerons. The wheel track is wide (about 7 ft.), and a fairly long travel is provided, the shock absorbers being in the form of rubber blocks working in compression. Partly to reduce air resistance, and partly to protect the rubber against dirt and light, a streamline casing is placed around the rubbers, as shown in one of our sketches.

The power plant is, as already mentioned, a Walter engine of either the 85 h.p. 7-cyl. or 120 h.p. 9-cyl. type. It is mounted on an engine plate attached to the fuselage at four

points only, and petrol is supplied by gravity feed from two tanks mounted in the top plane. The oil tank is behind the engine, in the top fairing of the fuselage.

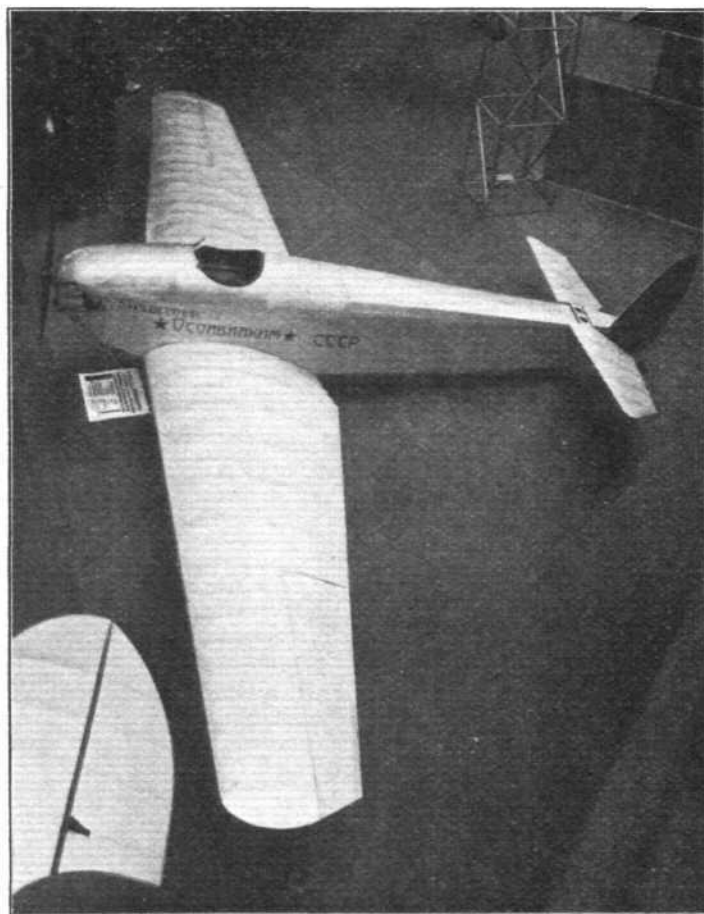
Following are the main dimensions of the Avia B.H. 29: length, overall, 8.035 m. (26.35 ft.); wing span, 10 m. (32.8 ft.); wing area, 25 sq. m. (269 sq. ft.). Weight, empty, 545 kg. (1,200 lbs.). The load is composed as follows: pilot and pupil, 160 kg. (352 lbs.); petrol, 70 kg. (154 lbs.); oil, 10 kg. (22 lbs.); various gear, 30 kg. (66 lbs.). Total load, 270 kg. (594 lbs.). Total loaded weight, 815 kg. (1,794 lbs.). These figures relate to the machine as fitted with the 85-h.p. engine. With this engine, the performance is as follows: Top speed near ground, 135 km./hr. (84 m.p.h.); cruising speed, 120 km./hr. (75 m.p.h.); minimum speed, 60 km./hr. (37 m.p.h.); practical ceiling, 2,200 m. (7,260 ft.); climb to 1,000 m. (3,280 ft.) in 12 mins.; climb to 2,000 m. (6,560 ft.) in 40 mins. Range, 420 km. (260 miles.)

"Letov" CS. *Tovarna na Letadla*.—The "Letov" type S.218 school machine exhibited was a plain straightforward two-seater of wood construction. Like the Avia B.H. 29 it was very robustly built, evidently with hard work rather than refinement in view, and using forms of construction both in fuselage and wings which made repairs easy. The engine fitted was a Walter 120 h.p. 9-cylindrical radial air cooled, and with this power plant a top speed of 100 m.p.h. is attained.

The "Letov" S.218 has the following dimensions: Length overall, 6.97 m. (22.85 ft.); wing span 10 m. (32.8 ft.); wing area, 20.6 sq. m. (222 sq. ft.). The tare weight is 470 kg. (1,034 lbs.), and the load carried is 226 kg. (497 lbs.), giving a total loaded weight of 696 kg. (1,531 lbs.). The top speed is 160 km. h. (100 m.p.h.) and the landing speed 60 km./h. (37 m.p.h.). The climb to 1,000 m. (3,280 ft.) occupies 5 to 7 minutes, and the ceiling is approximately 4,000 m. (13,000 ft.). Fuel is carried sufficient for 2 hours' flying.

The Russian Light Planes

Of the five machines exhibited by Soviet Russia three were light planes: The Aviatrust U2 100 h.p. biplane, the Ossoaviachim "Burevestnik" low-wing monoplane single-seater, and the "Tri Druga" two-seater high-wing monoplane, also designed and built by the Ossoaviachim Co. Both the latter



A 20 H.P. RUSSIAN LIGHT MONOPLANE: The "Burevestnik" (Stormy Petrel) is a low-wing monoplane single-seater with flat twin air-cooled engine.

machines had flat-twin air-cooled engines which appeared to be of a size to develop some 20-30 h.p. Unfortunately no detailed information was available other than that given on placards exhibited on the stand.

The U.2 school machine exhibited by the Aviatrust Co. was a plain straightforward single-bay two-seater biplane of wood construction, fitted with a 100-h.p. five-cylindere radial air-cooled engine. No figures of dimensions were obtainable, but it was stated that the machine had a total loaded weight of 870 kg. (1,915 lbs.), and that the top speed was 155 km./h. (96 m.p.h.). The landing speed was given as 56 km./h. (35 m.p.h.) and the climb to 1,000 m. (3,280 ft.), and 2,000 m. (6,560 ft.), as 6 mins. and 16 mins. respectively.

The "Burewestnik" (*Stormy Petrel*) low-wing monoplane was similar in a general way to the little Klemm monoplanes and was like them of all-wood construction, although the wing was fabric covered. The undercarriage was unusual in that the axle was in the form of a curved member of wood, probably laminated to form a spring, and carried wood wheels with flat leather tyres. The arrangement of the undercarriage is illustrated in one of our sketches.

Following are the main dimensions, weights, &c., of the "Burewestnik": length overall 6 m. (19.7 ft.); wing span 9 m. (29.5 ft.). Tare weight, 150 kg. (330 lbs.); total loaded weight, 270 kg. (594 lbs.). Maximum speed 155 km./h. (96 m.p.h.). Ceiling, 7,000 m. (23,000 ft.). The performance figures appear somewhat optimistic, but possibly the engine develops more than the power assumed.

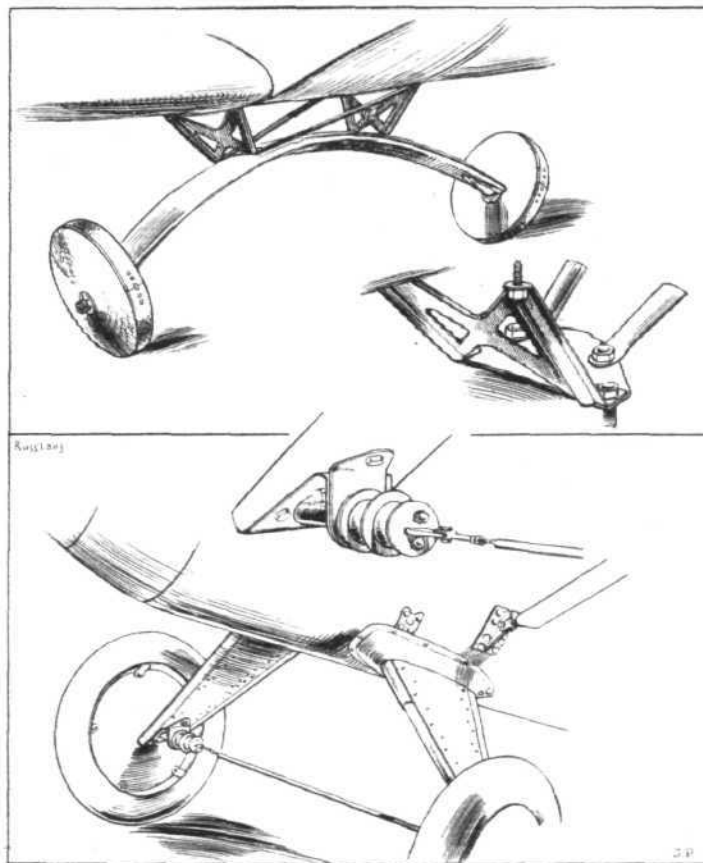
The "Tri Druga" high-wing monoplane was a two-seater, and like the "Burewestnik" was characterised by an unusual undercarriage, although of quite different type. In the "Tri Druga" each wheel was supported on a streamline strut hinged to the lower longeron. A streamline wire connected the wheel centres, and incorporated rubber compression blocks. When the load is taken by the wheels, these move outwards, and in so doing tighten the wire and compress the rubber. The details are shown by sketches.

The "Tri Druga" had a length of 6.92 m. (22.7 ft.) and a wing span of 12 m. (39.4 ft.). The tare weight was 245 kg. (539 lbs.) and the gross weight 417 kg. (906 lbs.). The top speed claimed was 127 km./h (79 m.p.h.) and the ceiling 5,250 m. (17,200 ft.). A placard on the stand stated that this little two-seater had flown 10,800 km. (6,700 miles).

Unclassified Types

Space does not permit of giving the descriptions of various unclassified types this week, but these will be published in our next issue.

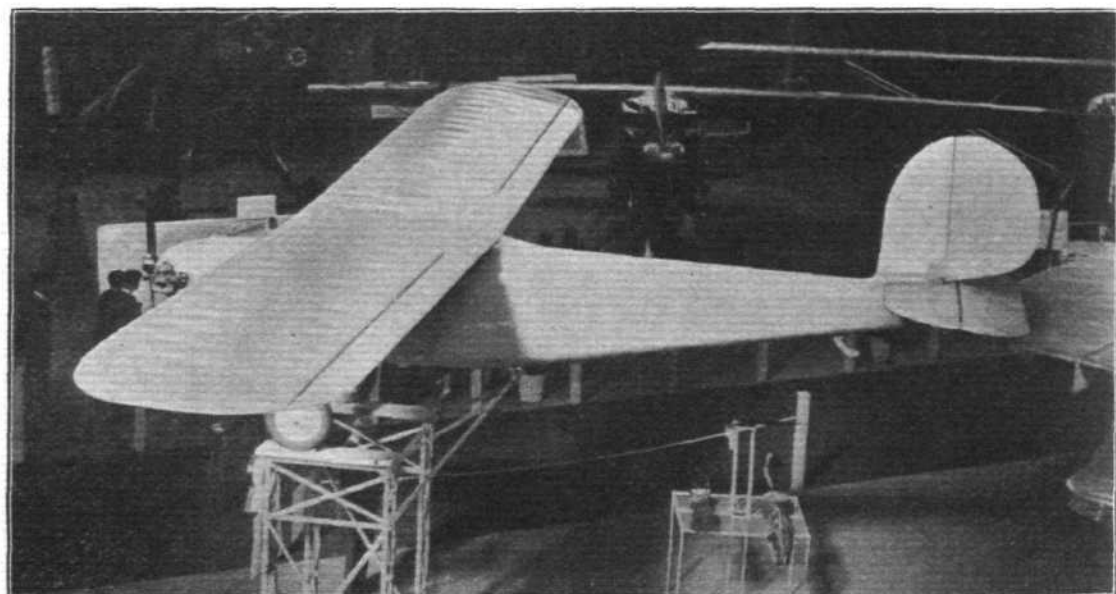
(To be concluded.)



[" FLIGHT " Sketches

BOLSHEVIK UNORTHODOXY : Two unusual undercarriages on Russian light 'planes. Above, the wood spring axle and ply-wood covered leather-tyred wheels of the low-wing monoplane "Burewestnik." Inset, details of the attachment of axle to fuselage. Below, the unusual springing on the strut-braced parasol monoplane "Tri Druga." The undercarriage struts are free to rock slightly from side to side, and the "axle" takes the form of a streamline wire stretched between wheel centres. Under load the wheels move outwards, stretch the wire and thus compress the rubber block shock absorbers.

A Russian low-power two-seater: The "Tri Druga" (three friends) is a high-wing monoplane, strut braced, and mainly of wood construction.

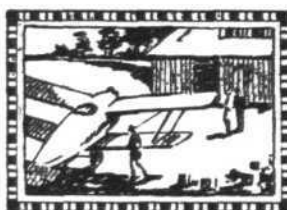


Racing Motorist Resumes Flying

CAPT. MALCOLM CAMPBELL, the motorist who established a world land speed record in America of 207 m.p.h., has become the owner of a Gipsy-Moth. He will call it "Blue Bird," after the name of his record-breaking car, and is having it painted in the same familiar colours—blue and

yellow. He is likely to use the machine for aerial survey in many parts of the world to discover a good speedway permitting speeds of 250 m.h.p. During the war, Capt. Campbell was a pilot in the Royal Air Force. It will be remembered that Capt. Campbell used a Napier "Lion" aero engine in his racing car.

PRIVATE



FLYING

A Section of **FLIGHT** in the Interests of the Private Owner, Owner-Pilot, and Club Member

A CANADIAN AIR DAY

English Successes

To celebrate the inauguration of the first international air mail between Montreal, Canada, and New York City, on October 1, the former city organised a large programme of flying which attracted forty-three machines to St. Hubert Aerodrome, Montreal. These included fifteen D.H. "Moths," four of them belonging to the Montreal Flying Club, a Reid "Rambler" light plane, Ford three-engined cabin machines, Armstrong-Whitworth "Siskins," Canadian-Vickers "Fairchild" cabin monoplane, Swallows, Monocoupe, a German "Junkers" monoplane of the "Bremen" type and Avro 504 N. The meeting is of particular interest to this country because Capt. F. G. M. Sparks, the former instructor of the London Aeroplane Club, and now chief instructor to the Montreal Club, won the biggest event of the day, a thirty-mile race open to all civil aircraft. He flew the Club's D.H. "Moth" (Cirrus). Third place was gained by his assistant instructor, Capt. Spooner, brother to Miss W. E. Spooner, the private owner. He also flew a D.H. "Moth"—entered by the Grandby Aero Club. Second place also went to a D.H. "Moth" entered by the De Havilland Aircraft Co. of Canada and flown by Mr. E. Leigh Caproel. There were two heats. The winner's speed was 118.8 m.p.h. A D.H. "Moth" was also fourth, piloted by Mr. R. S. Horsley, of the Canadian Air Express, Ltd., whilst fifth position would have gone to an Air Sedan, flown by Capt. E. M. Hand, president of the Toronto Flying Club, but he was disqualified through failing to pass one of the markers. His place was then designated to Mr. Romeo Vachon, on a Stearman biplane owned by Canadian Transcontinental Airways, Ltd.

Other machines competing were Swallow, Monocoupe,

Vickers "Fairchild," and two or three other D.H. "Moths," making a total of twelve.

Capt. Sparks was reported to have spent much care in stream-lining his machine. He won another very important Canadian Air Race at Windsor, Ontario, of 100 miles, in September. An excellent exhibition of flying was also given by him during the Montreal meeting.

Other Events

Four Armstrong-Whitworth "Siskins" flown by pilots of the Royal Canadian Air Force also gave an exhibition of stunting in formation and bombing.

A Junkers monoplane was flown up from New York by Mr. Fred Melchior, the Junkers pilot in America, who went to Canada with Miss Herta Junkers to give assistance to the Junkers "Bremen" monoplane which landed on Greenly Island after flying the Atlantic. It was used for joy-riding, the last group taken up being nine police constables who were able to get a comprehensive view of the territory they daily patrol. Joy-riding was also done in the two Ford three-engined machines, which carry 14 passengers each and which are all-metal.

This Montreal Air Derby was made possible through the co-operation of Mr. C. D. Browne, general manager for Canada of the C. C. Wakefield Company; Mr. Harold Morgan, general manager of Henry Morgan and Co.; The Imperial Oil Co. and National Breweries, Ltd. Canadian Vickers, Ltd., also contributed largely to making the race possible. First prize amounted to 400 dollars, second, 200 dollars and third prize 100 dollars.

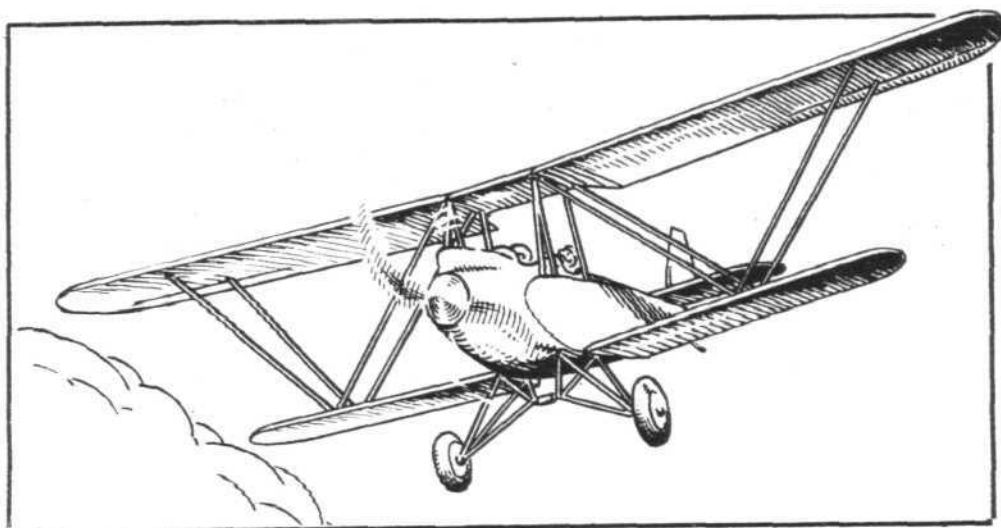
Among the officials in charge of events was Mr. R. A. Loader,



Montreal Air Meeting: General views at Montreal aerodrome on October 1, when 43 machines, including many D.H. "Moths," took part. The machine in foreground of the upper view is the D.H. "Moth" in which Capt. F. G. M. Sparks won the important 30-mile race. The machines in formation (top left corner) are Armstrong-Whitworth "Siskins" which gave an excellent demonstration.

Sketch of the Reid "Rambler" light aeroplane, a new Canadian production, though designed by an Englishman, Mr. Reid. It has a top speed of 102 m.p.h., is of all metal construction and is fitted with hydraulic brakes. The engine is an A.D.C. "Cirrus"

["FLIGHT" Sketch]



general manager of the De Havilland Aircraft Co. of Canada; Squadron-Leader A. T. L. Cowley was handicapper, and Capt. W. S. Lighthall, judge.

NEW LIGHT 'PLANE

The Reid "Rambler" light aeroplane, mentioned above, is a new Canadian production though designed by an Englishman, Mr. W. T. Reid, who was originally with the Bristol Aeroplane Co., in England and went to Canada as Chief Designer of Canadian Vickers, Ltd. He has now formed the Reid Aircraft Co. and his first machine made its debut at the meeting. The engine fitted is a Mk. II "Cirrus." The machine is of all-metal construction and fabric covered. Differential hydraulic brakes are fitted to the chassis. The wings fold and the complete absence of bracing ensures permanent rigid rigging. Top speed is stated to be 102 m.p.h. and landing speed 38 m.p.h. Useful load is 600 lbs. and fuel capacity 20 gallons.

Air Services Commence

During the meeting the Canadian Colonial Airways, Ltd. plane from New York and Albany, arrived at 11.20 a.m.,

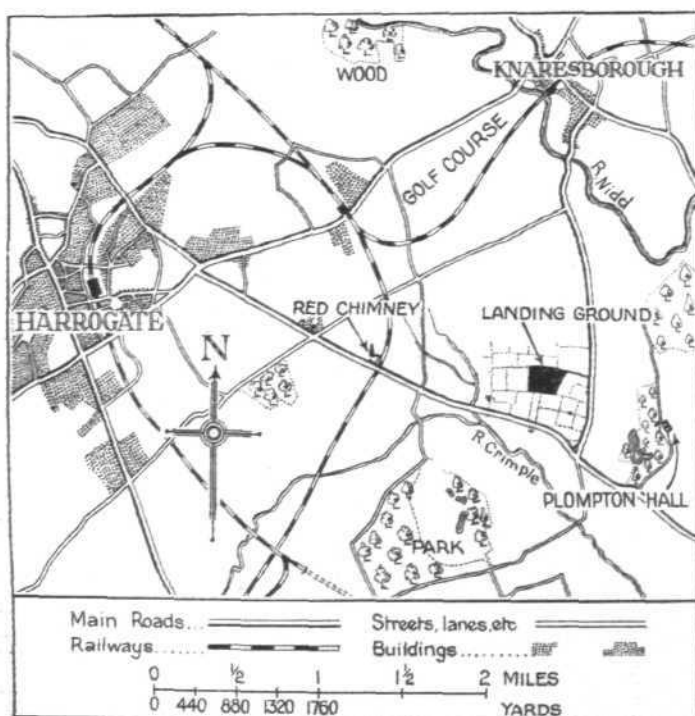
piloted by Mr. Paul Reeder. Mr. H. P. Ayres brought in a Canadian Transcontinental Airways, Ltd. machine from Rimouski, at 11.30 a.m., and almost immediately afterwards Capt. D. S. Bondurant left for Toronto with a consignment of air mail in a Canadian Airways, Ltd. craft. Shortly after luncheon the air mail from Toronto arrived, included in which was a carton from Mayor McBride to Mayor Walker of New York. This was transferred to the south-bound Albany plane piloted by Mr. W. A. Hughes, that took off at 2 o'clock, the cargo consisting also of a live bear cub, three months old.

The Canadian Colonial Airways' planes are all Fairchilds, powered with the Pratt & Whitney "Wasp" 425 h.p. engine, and painted in two shades of blue.

While the first daily aerial mail service between Montreal and Toronto was inaugurated on October 1, the initial carriage of mail by aeroplane between the two cities dates from June 21, 1918, when Capt. Bryan A. Peck piloted his Curtis biplane from the Queen City, returning on June 24 with official correspondence. He covered it in stages though he could have flown non-stop.

LANDING FIELD FOR HARROGATE

It is essential that before anyone avails himself of the field at Pumpton Bar, near Harrogate, of which we give a map and particulars here, he should become familiar



["FLIGHT" Map]

HARROGATE : The landing field at Pumpton Bar, convenient when flying to Harrogate, is 340 yards by 440 yards. It should be used with careful regard of the estates in the vicinity.

with the conditions under which it can only be utilised. It was used as a temporary measure for the Air Rally during last August.

The farmer concerned holds no objections to the landing of aircraft, but such should be regarded as a favour and particular care observed against low flying, for this might disturb game, for instance, and also large estates are in the neighbourhood, including Goldsborough Hall, the home of Princess Mary, and Ridding and Stockwell Parks.

No charge is made by the farmer, but it is usual to extend a kindness in return and certainly pay promptly on a liberal scale for any damage done. This year the site was a hay-field, and at present sheep and cattle graze there. Next year it will probably be for hay again, so that from the middle of April to the middle of July, or possibly longer, it would be unwise to land there without previous inquiry as to "how the land lies."

A main consideration to observe is not to involve the farmer in any trouble with the owners of the estate or his neighbours.

The smoke from the brickworks new red chimney forms a good wind indicator. Forced landings are possible in the fields surrounding the landing field but not altogether advisable owing to rough surface.

The surrounding conditions are varied. On the outer fields to the south and west the ground slopes and on the eastern side the ground is smooth and flat. To the north it is flat and alternatively smooth and rough. There is a high hedge on the west, affording shelter from the prevailing winds. Motor buses pass close to this site.

A licence for the field, which is 340 by 440 yards, held by Mr. Erik W. Addyman, of the White House, Starbeck, Harrogate, a keen and valuable follower of aviation, has now run out, but if anyone wished to use the field for passenger carrying, for instance, it could be renewed for £1 1s. This would mean less trouble than inspecting the site, purchasing and filling in ordnance maps, and obtaining a fresh licence.

READING AIR DISPLAY New Club Formed

THIS period of the year is not usually favourable for air meetings, and it was therefore not unexpected when bad weather on October 27 marred the air display at Swallowfield Aerodrome, Reading, organised by the Berks, Bucks and Oxon Aeroplane Club. A very large crowd would undoubtedly have attended, and despite the number of people present it is satisfactory to know that expenses were cleared. The support of visiting aircraft was quite good in the circumstances. There were at least a dozen machines present.

Miss W. Spooner, who is a member of the new club, flew her Gipsy-Moth, and her original Mk. I, D.H. "Moth" was flown at the meeting. Lady Heath, who has recently had an attack of influenza, motored down, but also flew during the afternoon in an Avro "Avian." Capt. H. Broad was on a Gipsy-Moth, in which he gave an excellent display of aerobatics which included inverted flying, rolls, loops, and the stunt termed "The Rocket."

Also on Gipsy-Moths were Mr. G. A. R. Malcolm and Mr. P. Hoare, both private owners, whilst Mr. A. C. M. Jackaman, the private owner, flew his D.H. "Moth" (Cirrus). Capt. "Jerry" Shaw flew the Shell Company's golden D.H. "Moth," and Mr. Matthews, instructor of the London Aeroplane Club, was on one of the club's Cirrus-Moths. There was also

Squadron-Leader T. England on the slotted D.H. "Moth" (Cirrus), with which he gave his usual illuminating display of the effect of the Handley-Page slot. Flight-Lieut. Rae flew the R.A.E. Club's D.H. 53, and Mr. F. G. Miles, of the Southern Aero Club, was on a Mono-Avro.

One of the most fascinating items of the display was a parachute descent by the Club's oldest pilot member, Capt. Stewart, who shed a white beard whilst descending, and eventually landed adorned with an "Old Bill walrus" moustache. Other events included balloon bursting and racing, though these were hindered by the weather.

Some of the pilots helped the Club by taking passengers for joy flights.

After the pageant there was a dance in the evening for the club's members and visiting pilots, at Swallowfield Park, given by the Chairman, Mr. Arthur Russell, and his brother, Sir Charles Russell. The hostess was Baroness Heemstra.

A lady is the club's honorary secretary, who thereby sets a precedent in the club movement. Her name is Miss "Toby" Cribb. Another member is Capt. O. M. Baldwin, the racing motor-cyclist. About 200 members have already enrolled, and with the purchase of machines early next year flying is expected to commence next spring.

LIGHT 'PLANE CLUBS

London Aeroplane Club, Stag Lane, Edgware. Sec., H. E. Perrin, 3, Clifford Street, London, W.1.

Bristol and Wessex Aeroplane Club, Filton, Gloucester. Secretary, Major G. S. Cooper, Filton Aerodrome, Patchway.

Cinque Ports Flying Club, Lympne, Hythe. Hon. Secretary, R. Dallas Brett, 114, High Street, Hythe, Kent.

Hampshire Aero Club, Hamble, Southampton. Secretary, H. J. Harrington, Hamble, Southampton.

Lancashire Aero Club, Woodford, Lancs. Secretary, F. W. Atherton, Woodford Aerodrome, Cheshire.

Liverpool and District Aero Club, Hooton, Cheshire. Hon. Secretary, Capt. Ellis, Hooton Aerodrome.

Midland Aero Club, Castle Bromwich, Birmingham. Secretary, Major Gilbert Dennison, 22, Villa Road, Handsworth, Birmingham.

Newcastle-on-Tyne Aero Club, Cramlington, Northumberland. Secretary, J. T. Dodds, Cramlington Aerodrome, Northumberland.

Norfolk and Norwich Aero Club, Mousehold, Norwich. Secretary, G. McEwen, The Aerodrome, Mousehold, Norwich.

Nottingham Aero Club, Hucknall, Nottingham. Hon. Secretary, Cecil R. Sands, A.C.A., Imperial Buildings, Victoria St., Nottingham.

The Scottish Flying Club, 101, St. Vincent Street, Glasgow. Secretary, Harry W. Smith.

Southern Aero Club, Shoreham, Sussex. Secretary, C. A. Boucher, Shoreham Aerodrome, Sussex.

Suffolk Aeroplane Club, Ipswich. Secretary, Maj. P. L. Holmes, The Aerodrome, Hadleigh, Suffolk.

Yorkshire Aeroplane Club, Sherburn-in-Elmet, Yorks. Secretary, Lieut.-Col. Walker, The Aerodrome, Sherburn-in-Elmet.

LONDON AEROPLANE CLUB

REPORT for week ending October 28.—Pilot instructors: V. H. Baker and F. R. Matthews. Ground engineer: C. Humphreys. Aircraft: The following machines were in commission during the week:—G-EBNY; G-EBMP; G-AABL; G-EBXS. Total flying time for the week: 46 hrs. 25 mins.

Dual instruction: 37 members were given dual instruction and the flying time was 21 hrs. 5 mins.

Solo flying: 32 members with "A" licences made solo flights and the flying time was 23 hrs. 35 mins.

Passenger flights: Seven passenger flights were given to temporary members and the flying time was 1 hr. 45 minutes.

Mr. A. L. F. Hill made the necessary qualifying tests for his "A" Licence during the week.

Cross-country flights for instruction in navigation were made by T. Elder-Hearne, J. J. Hofer and P. A. Wills.

Reading Pageant: The club was represented at the Reading Pageant by Mr. F. R. Matthews and Mr. P. A. Wills in G-AABL.

Damage to G-AABL: On Sunday F. Heath crashed G-AABL. Side-slipping into the aerodrome he misjudged the distance and landed heavily. The damage will be fairly considerable.

The accidents to G-EBMF and G-AABL, both happening within the last fortnight have reduced the available club aircraft to three.

BRISTOL & WESSEX AEROPLANE CLUB, LTD.

REPORT for week ending October 27.—Pilot instructor for the week: E. W. B. Bartlett. Ground engineer for the week: A. W. Webb. Machines in commission: Two G-EBYH and G-EBTV. Flying time for the week: 7 hrs. Number of pupils instructed and hours flown (5) 2 hrs. 55 mins. Number of soloists instructed and hours flown (1), 15 mins. Number of "A" pilots flying and hours flown (2), 55 mins. Number of passengers and hours flown (4), 2 hrs. 15 mins. Number of test flights and hours flown (6), 30 mins.

Rain, more rain, heavy rain, rain in buckets and otherwise, hail, and gales, have caused disappointment to many members including several prospective "A" pilots.

We congratulate the Hon. H. C. B. L. Bathurst on successfully passing his "A" Licence Tests in between the storms in none too good weather.

Mr. Downes Shaw with Mr. H. E. Davis as passenger had an interesting flight in the 21st. The object of the flight was to reconnoitre for possible landing grounds at Upton on Severn. Soon after starting heavy rain was sighted between them and their objective. A deviation from their course via Cheltenham, Evesham and Worcester enabled them to work round the bad weather and they successfully carried out their reconnaissance of Upton on Severn. On the return journey similar trouble was encountered. It was found necessary to return across the Malvern Hills and over the Forest of Dean through two lines of rain but in comparatively clear weather.

CINQUE PORTS FLYING CLUB

REPORT for week ending October 20.—Pilot instructor: Major H. G. Travers, D.S.C. Ground engineer: Mr. R. H. Wynne. Machine: D.H. Moth G-EBNN. Total flying time: 1 hr. 15 mins. Dual instruction (with Major Travers): Mr. Swinnard, Mr. Gunner and Mr. Martin, 15 mins. each. Total, 45 mins. Test flights: 3—30 mins.

Very bad weather with rain, low visibility, and high winds interfered with flying the whole week, and accounts for the small hourage.

We were glad to see Mr. Martin back again after his crash at Brooklands in his Austin Seven car.

Mr. Law, a new member from London, has purchased an "X" type Moth G-EBYS, which is now in the club hangar and he is shortly going to learn to fly with the club.

Special attention is drawn to the fact that this club is giving special rates for tuition during the winter, and as there is no waiting list and weather conditions here are frequently far more favourable for tuition than summer weather, this represents a very good opportunity for people wishing to learn to fly quickly and cheaply.

REPORT for week ending October 27.—Total flying time for week, 7 hrs., 55 mins. Dual instruction (with Maj. Travers) (five pupils): Mr. Martin 30 mins.; Mr. Worsell, 1 hr.; Mr. Clemetson, 30 mins.; Mr. Law, 3 hrs. 45 mins.; Mr. Douglas, 1 hr. Total, 6 hrs. 45 mins. Joy-rides (with Maj. Travers) (three), 30 mins. Test flights (four), 40 mins.

Our new pilot-owner member, Mr. Law, commenced instruction this week, and the time recorded in the Club flying time under his name was done in his own machine Y.J.

Consequent upon some remarks in the *Daily Mail*, this Club has entered into an agreement with the Household Brigade Flying Club, the membership of which is restricted to serving officers of the Brigade of Guards, for special arrangements to be made for teaching their members who are drafted to the Canterbury Depot or to the Small Arms School. The keenness of Guards officers is very marked, and prior to this arrangement we had four officers from the Canterbury Depot under instruction, two of whom have taken their licences with this Club. These facilities have been extended in a modified form to cover all serving officers in the Regular Army taking the course at the Small Arms School, and every effort will be made to provide quick tuition so that they may pass right through for their certificate during the period of the course. We hope that officers will take advantage of this unique opportunity.

We were again stopped flying completely on two days during the week owing to the weather, and greatly hindered by it on the remaining days.

HAMPSHIRE AEROPLANE CLUB

REPORT for week ending October 27.—Pilot instructors: Flight-Lieut. F. A. Swoffer, M.B.E., and Mr. W. H. Dudley. Ground engineers: Mr. E. Lenny and Mr. J. Elliott. Aircraft: D.H. 60 Moths, G-EBOL and G-EBOH. Flying time for the week, 20 hrs. 10 mins. Pupils under instruction (20) 14 hrs. 40 mins.; soloists (three), 1 hr. 15 mins.; "A" pilots (seven) 3 hrs. 40 mins.; passengers (two), 45 mins.; tests (seven), 35 mins.

The weather this week has been very bad, and on Wednesday and Friday the machines were unable to leave the hangar.

On Thursday Lieut. T. P. Coode, R.N., passed his height test.

Our engineers did a smart piece of work the other day. One of our Cirrus Mark II engines came off service with a cylinder-head joint blowing. The head was removed and replaced, and the engine was on service again before it had had a chance to get cool.

We were pleased to be visited again by Mr. J. G. Crammond, who arrived on Sunday in his Avian, and by Messrs. Smith and Baker, who flew down

in the slotted Gipsy Moth, registered in the name of the latter; also by Mr. Bert Hinkler, whom we last saw on the eve of his remarkable flight to Australia.

LANCASHIRE AERO CLUB

REPORT for week ending October 27.—Flying time, 5 hrs. 40 mins.; machine in commission, G-EBND. Instruction (five), 1 hr. 35 mins.; solo flights (seven), 1 hr. 35 mins.; passenger (seven), 2 hrs.; tests (four) 30 mins.

Instruction (with Mr. Hall): Harber, Weale, Ashworth, J. H. Hardy, Eckersley.

Pilots: Crosthwaite, Mills, Lacayo, Nelson, D. Hardy, Cantrill.

Passengers: (With Mr. Caldecott) Ramsden; (with Mr. Meads) R. P. Hall; (with Mr. Goodfellow) Carter, D. R. Goodfellow; (with Mr. R. F. Hall) Booth, Cressey, W. Ashworth.

LIVERPOOL & DISTRICT AERO CLUB

REPORT for week ending Saturday, October 27.—Instructor: Flight-Lieut. J. B. Allen. Ground engineer: Mr. Howard Pixton. Machines in service: WK and XX. Total flying time, 11 hrs. 50 mins. Sixteen pupils, including Mr. Waller, a new member, flew a total of 8 hrs. 10 mins., dual instruction. Three soloists under instruction flew a total of 1 hr. 45 mins. Five "A" pilots flew a total of 55 mins. Two passenger flights totalled 40 mins.; tests, 20 mins.

Owing to unfavourable weather, flying was impossible on Wednesday and Saturday.

Repairs are not yet completed to XY owing to spare parts being lost in transit, and we were therefore unable to support the Berks, Bucks and Oxon Club's Display.

We are purchasing a spare engine, which will enable us to keep our three machines always available so far as the motors are concerned.

Mrs. Naylor carried out her tests for "A" licence on Thursday in a very satisfactory manner. Mrs. Naylor's flight was remarkable in that (a) she is the first lady member to pass her tests, (b) she was not photographed before or after the flight, and (c) did not carry lipstick, powder, or other aids to an impromptu toilet at 7,000 ft. Mrs. Naylor has taken her ticket before her husband, who is also a flying member. Congratulations on all counts.

MIDLAND AERO CLUB

REPORT for week ending October 27.—The total flying time was 20 hrs. 38 mins. Dual, 5 hrs. 25 mins.; solo, 12 hrs. 50 mins.; passenger, 1 hr. 55 min.; test, 28 mins.

The following members were given dual instruction by Flight-Lieut. T. Rose, D.F.C., and Mr. W. H. Sutcliffe:—J. B. Briggs, W. L. Handley, R. G. Welch, J. A. Ridsdale, M. C. Wilks, C. T. Davis, Dr. W. G. Tillekem, Mrs. Leigh-Fermor, Maj. D. Thompson.

"A" Pilots:—E. P. Lane, E. R. King, J. Rowley, R. C. Baxter, M. A. Murtagh, R. L. Jackson, S. Duckitt, G. Robson, F. J. Steward, W. M. Morris. Soloists:—J. B. Briggs, W. L. Handley, R. G. Welch, M. C. Wilks, J. K. Morton, Dr. W. G. Tilleke.

Passengers:—E. Hanson, H. R. Attwood, Miss J. M. Davis.

Owing to high winds and heavy rain flying was only possible on four days during the week. However, two members went in search of the sun. Mr. E. R. King ascended to 15,000 ft., and Mr. R. L. Jackson to 12,000 ft., in X.T.

NORFOLK & NORWICH AERO CLUB

REPORT for week ending October 28.—Total flying time, 8 hrs. 55 mins. Dual, with Mr. Young: Messrs. L. Mortor, E. T. Green, A. Kirkby, C. Land, E. Varden Smith (Advanced).

Solo: Messrs. W. S. Coates, L. Lowen, N. Brett, R. T. Harmer, C. Gowing, A. V. Harvey, W. A. Ramsay, H. Pank, A. G. Marshall.

Another week of moderate weather has restricted our operations in the air and one machine has been found sufficient for our needs. Messrs. Lowen and Gowing are to be congratulated on completing their height tests satisfactorily, and we welcome Mr. Green to the club as an active flying member. He took his first lesson this week. The main social event in the near future is, of course, the club ball on November 9, and the tickets are very nearly all disposed of, so we are promised a goodly crowd. This Thursday, Mr. J. D. North is giving the lecture which he was compelled to postpone owing to his German Show visit. We are looking forward to this lecture and possibly he will have something to say about the show.

NOTTINGHAM AERO CLUB

REPORT for week ending October 26.—Flying time, 19 hrs. 25 mins. Instruction, 1 hr. 45 mins.; "A" pilots, 10 hrs. 30 mins.; solo (under instruction), 3 hrs. 50 mins.; passengers, 2 hrs. 20 mins.; tests, 1 hr.

Instruction (with Mr. Martin): Messrs. Kay, Thorpe, Hatton, Austin, Dr. Lyons.

Solo, "A" Licence: Messrs. Taylor, Wynn, Pilgrim, Selvey, Whitby, Bradley, Ball, Hamilton.

Solo (under instruction): Messrs. Austin, Hatton, Winn, Shipside, Hall.

Passengers: Miss Trehearn, Messrs. Selway, Smith, Canridge, Lilley.

Indian Flying Clubs

MAJOR T. S. IMPEY, Secretary of the Aero Club of India and Burma, has completed a tour of four flying clubs of India to confer with their committees on the final arrangements to inaugurate actual flying. It is now the aim of his committee to bring about a uniformity of organisation and an interchange of ideas between all clubs. The Karachi Club, as the first flying club to be formed in India, is in a very advanced position, and there can be nothing to prevent flying instruction taking place within a week of the arrival of the two D.H. "Moth" aeroplanes from England, which should be about the first week in November. This also applies to the flying clubs at Bombay, Calcutta and Delhi, where all the committees, composed of leading men, are keenly anxious to see flying started in India with the least delay. They are willing to give all necessary time to help to organise clubs, and many are looking forward themselves to learning to fly, whilst applications are coming in from all parts of India.

J. F. Leeming Retires

We understand that Mr. John F. Leeming, the very active Chairman of the Lancashire Aero Club, has retired from that position. He is not, however, retiring from

Bad weather has again seriously curtailed our flying time this week. On Sunday morning, Mr. Cyril Ball arrived back with "QW" from Bristol, and later in the morning, Sir Sefton Branccker arrived here in the "AA" "Moth" piloted by Mr. Ramsden, who almost immediately returned to Bristol. Sir Sefton was the guest of Sir Albert Ball, our Vice-President, and afterwards visited the site of our new aerodrome at Tollerton, and said it was the best site he had inspected for a municipal aerodrome. On arriving back at Hucknall, Mr. Martin conveyed Sir Sefton to Sherburn aerodrome with "QW" and on the return journey, about 6 miles north of Hucknall a rocker arm broke and he was forced to descend, which was carried out O.K. The machine was left overnight and after repairs, duly arrived at the stable. On Wednesday, Mr. J. Austin whilst doing his height test, succeeded in losing the aerodrome and made a good landing at Flintham near Newark to enquire where Hucknall had gone to. However, Mr. Martin and Mr. J. Taylor flew over with "QW"—the latter flying "BA" back. There seems to be an epidemic for new pilots doing their height tests to lose their way, and it will have to cease or else Mr. Cyril Sands will lose his business and the staff will be getting prematurely old.

SUFFOLK & EASTERN COUNTIES AEROPLANE CLUB

REPORT for week ending October 27.—Instructor: G. E. Lowdell, A.F.M. Ground engineers: "C" E. Mayhew, "A," G. Keeley. Three Blackburn "Bluebirds": RE, SZ, and UH.

Flying time: 12 hrs. 50 mins. Nine members were given dual instruction (4 hrs. 45 mins.). Flights were made by six "A" Licence pilots (4 hrs. 40 mins.). Twelve passengers were carried (2 hrs. 40 mins.). Nine test flights were made (45 mins.).

One of our members, Mr. S. Schofield, has just returned from a trip to America (no! not on one of the Club's "Bluebirds"). While there he did a considerable amount of flying and, as a result of his training at Hadleigh, was able to obtain an American Limited Commercial Licence, which calls for very exacting flying tests with simplified technical tests.

This licence permits joy-riding for hire within a limited distance of a licensed aerodrome. The idea might be worth following in this country, as such a licence would be extremely useful in the club world.

Our friends in Hampshire will thus see that our member has now returned and it will no doubt relieve them to know that he has got a little beyond his "A" Licence stage. While he greatly appreciates the kind invitation to join the Hampshire Club, he thinks that he prefers to stay here with three machines at his disposal for 6 hrs. a day rather than have 2 mins. a day, which is about all he could hope for when 411 members were sharing three machines.

The Cambridge Aeroplane Club

THE Cambridge Aeroplane Club is about to be launched as a branch of the Suffolk and Eastern Counties Aeroplane Club. This is at the express request of members and potential members who live in the Cambridge district and find Hadleigh rather a long way by road when they want to fly. As a start it is proposed to send a machine to Cambridge on Mondays and Thursdays. If, however, the demand arises further facilities will be provided. An excellent aerodrome has been found on the Cambridge-Huntingdon Road, and it is hoped to start the club in active flying early in November.

YORKSHIRE AEROPLANE CLUB

REPORT for week ending October 27.—Pilot instructor: Captain G. R. Beck. Chief ground engineer: R. Morris. Assistant ground engineer: T. Houghton. Machines in commission: 2 (RF and SV). Flying time for week: 7 hrs. 15 mins. Instruction: 5 (2 hrs. 35 mins.). Soloists: Nil. "A" Pilots: 7 (4 hrs. 30 mins.). Passengers: Nil. Test flights: 2 (10 mins.).

Practically no flying, except on Sunday, October 21. Bad conditions prevailed during the remainder of the week.

We had a welcome visit from Sir Sefton Branccker at the week-end, when he came over by air to attend an official dinner in Leeds. Owing to the fog on Tuesday he was unable to return by air.

FROM THE FLYING SCHOOLS

The De Havilland Flying School, Stag Lane Aerodrome

REPORT for week ending October 21.—Total flying time, 53 hrs. 10 mins. Instruction (dual), 23 hrs. 20 mins.; (solo), 23 hrs. 15 mins. Other flying 6 hrs. 35 mins.

Ten new Gipsy "Moths" were tested and delivered during the week. On Friday, Mr. Alan Butler, chairman of The de Havilland Aircraft Co., Ltd., and Capt. G. de Havilland, flew their respective "Moths" to Germany for the Berlin Aeroplane Show.

REPORT for week ending October 28.—Total flying time, 69 hrs. Instruction—dual, 11 hrs.; solo, 38 hrs. 25 mins. Other flying, 19 hrs. 35 mins.

One of our Indian pupils successfully passed his tests for "A" certificate, and our Egyptian pupil passed his height test for "B" certificate. Eleven new "Gipsy Moths" were tested.

Mr. J. V. Holman, one of our instructors, is to be congratulated on his marriage to Miss L. Ludlow at Hanwell, on Saturday afternoon.

aviation—that would be hard to believe!—in fact, he is retiring in order to extend his activities in aviation. If that were possible!

Light Plane Record by Simmonds "Spartan"

A SIMMONDS "Spartan" light aeroplane, fitted with a "Cirrus" Mk. III engine and piloted by Mr. H. W. R. Banting, with Lt.-Col. L. A. Strange as passenger, flew non-stop from London to Berlin in 7 hrs. 10 mins. on October 24, which is claimed to be a record for the light plane class with a passenger on board. A return non-stop flight was made on October 27 by the same machine in a little under 6 hrs. About 56 lbs. of luggage was carried. Nearly 50 gallons of petrol were taken, and the mean average consumption was 15 gallons. There was a contrary wind on the outward flight and visibility was at times very bad. The altitude maintained was never more than 200 ft. up to Hanover and in the circumstances the navigation of Mr. Banting was very good.

The range of the "Spartan" was considerably more than that covered. With its full load it took off, both at Croydon and Tempelhof, without the slightest difficulty and it reached 1,000 ft. at Tempelhof before leaving the aerodrome on the return journey.



Sir Philip Sassoon's Eastern Cruise

ON October 24 Sir Philip Sassoon left Karachi for the return cruise to England in the Blackburn "Iris" (Rolls-Royce "Condors") flying-boat. He was accompanied by Sir Denys Bray, Foreign Secretary to the Government of India. A landing was made at Jask, where repairs are being effected. On October 26 another R.A.F. machine flew Sir Philip Sassoon from Jask to Basra, then to Baghdad on October 27.

American Ocean Flight

A SEAPLANE, named "Flying Fish," piloted by Capt. Lancaster, navigated by Mr. H. W. Lyon, and also carrying a passenger, Mr. G. Putnam, the American publisher, left Port Washington, Long Island, America, on October 28, for a flight across the sea to Bermuda, a distance of 800 miles. They were forced to land at Atlantic City owing to water getting in the fuel, and took off the following day for Bermuda via Hampton Roads. Capt. Lancaster was the pilot who flew an Avro "Avian" light aeroplane to Australia some time ago, accompanied by Mrs. Keith Miller. Mr. H. W. Lyon was one of the crew which flew the Pacific in the "Southern Cross" monoplane piloted by Capt. Kingsford Smith. It was reported a few months ago that Capt. Lancaster, Mr. Lyon and Mrs. Miller were preparing for an Atlantic flight from America.

Portuguese Flight

CAPTAINS PAIS RAMOS and VIEGAS, the Portuguese airmen engaged on a flight to Portuguese East Africa from Lisbon in a Vickers' "Valparaíso" (Napier "Lion") have reached Lourenço Marques. We hope to give further details later.

Australian Flight to England

CAPT. F. HURLEY and Flying Officers S. J. Moir and Owen left Sydney on October 30, at 4.38 a.m., to attempt a record return flight between England and Australia. They are flying in a Ryan monoplane, a sister type to that used by Col. Lindbergh on his Atlantic flight, having an endurance capacity of 40 hours. It is stated that the span of the machine has been increased 10 ft. The cost of the expedition, amounting to £10,000, has been privately subscribed. The pilots have set themselves the task of completing the test in 28 days.

Lady Bailey

ON her return flight from Africa, Lady Bailey reached Leopoldville on October 20 and left again for Coquilatville on October 23. Her machine is a D.H. "Moth."

New Atlantic Flight Proposed

MISS M. JOHNSON, a Philadelphia writer, plans to fly from the German Baltic coast to America with three companions in a Rohrbach "Rostra" seaplane. The machine has two Bristol "Jupiters" and is being specially adapted to ocean flying, with a cruising radius of 2,500 miles. Mail and freight may also be carried.

American Record Across Country

CAPT. C. B. D. COLLYER made a non-stop record flight westwards across America on October 25 in a Lockheed "Vega" monoplane, accompanied by Mr. H. Tucker, owner of the machine. They flew from Long Island to Los Angeles in 24 hrs. 51 mins., beating the previous record from east to west, which was 26 hrs. 50 mins., made by Lieuts. Macready and Kelley in 1923.

French Airmen Released

MM. REINE AND SERRE, the French airmen who have been held prisoners by tribes in Rio de Oro for a long time, have now been released and handed over to the Spanish authorities at Villa-Cisneros. On October 25 they left for Las Palmas.

Fokker Aircraft Corporation

A GROUP of capitalists, headed by Mr. J. A. Talbot and Mr. H. M. Hanshue, president of the Western Airways, are taking control of the Fokker Aircraft Corporation in America and are to erect a large aircraft factory in California to construct all types of aircraft, from light 'planes to bombers.

Mr. A. G. H. Fokker will be the designer. A capital of £800,000 has been subscribed by industrialists. The present Fokker plants at New Jersey and West Virginia will also be enlarged.

Survey Expedition

IMPERIAL Airways are sending out a survey expedition shortly to the Mediterranean to survey for bases for the England-India Air Route. Flight-Lieut. B. H. C. Cross will be in command. He has recently resigned his commission to take up an appointment with Imperial Airways as manager of the Mediterranean section.

Hunting by Air

LIEUT.-COM. GLEN KIDSTON, the private owner, left Croydon on October 29 in a Fokker three-engined monoplane piloted by Capt. D. Drew for Nairobi, where he proposes to hunt big game. The machine was previously owned by the late Capt. A. Loewenstein.

French Air Survey

LIEUTS. MARIE AND BOUMER and Adjutant Desmeaux, of the French Army Air Service, who are making a survey flight from France to Madagascar in a Breguet 19 A2 biplane, left Perpignan for Oran on October 26, after flying from Paris.

Winter Air Services to Berlin

THERE will be a winter service by air between London and Berlin this year. Commencing from London at 8.20 a.m. the machines will reach Berlin after dark, and for this purpose a part of the route has been equipped with illumination for night guidance. The service will be daily.

Rome-Venice Service

A MONOPLANE with four passengers flew from Rome to Venice, 280 miles, in 1 hr. 40 mins., on October 30. There is a daily service between those two cities.

Australian Items

AUSTRALIAN AERIAL SERVICES, LTD., of Melbourne, report that during the past few months a very marked increase has taken place in the number of passengers travelling on their regular aerial routes connecting Melbourne with the Riverina, Adelaide, Sydney, Broken Hill, etc. To further stimulate the traffic, a 10 per cent. reduction in the scale of fares will operate for the future, making fares in many instances favourably comparable with those charged for other forms of transport.

Total mileage flown since inception of service was 643,265, and total miles flown during August was 14,496. Percentage of arrivals within 1 hr. of schedule time was 97.3 per cent. Schedule flights completed since November 11, 1924, was 100 per cent. Number of fatal accidents since inception of service was nil. Average speed, including intermediate stops, was 66 m.p.h.

W. A. Airways, Ltd., of Perth, report that during the month of July, 21,910 surcharged letters were carried by air, and 6,899 lb. of freight during August. An important feature of the East-West (Perth-Adelaide) service, and one that will facilitate the carrying out of the schedule in cases of late arrival of steamers or trains, is the elaborate equipment to be installed to enable night flying to be carried out with the maximum of safety. Each aeroplane will be fitted with two strong headlights, one fixed, and the other working on a swivel in the same manner as a searchlight, to assist the pilot to pick up familiar objects when approaching a landing place. At various points between Perth and Cook, 24-in. revolving beacons will be erected, which will serve as a guiding line when flying by dark. Each beacon light will be of seven-and-a-half million candle-power, and will be visible for a distance of 80 miles. On either side will be a large letter "W" (on west side) and "E" (on east side) illuminated by flood lighting and clearly discernible from a high altitude. Approached from any angle, these letters will immediately give the pilot his exact direction for the next stage of his flight. The landing grounds at Perth and Forrest will be illuminated with powerful flood lights, and although the schedule does not make provision for night flying, in the event of a delay from any cause, that portion of the route between Perth and Cook (913 miles) may be flown between sunset and sunrise.

AVIATION AND THE BRITISH EMPIRE

Sir Samuel Hoare's Speech at Edinburgh

ON October 25, Sir Samuel Hoare, Secretary of State for Air, delivered an address, on "Aviation and the British Empire," before the Royal Geographical Society of Scotland, at Edinburgh. The speech was an extremely interesting one, and Sir Samuel reviewed the subject perhaps more fully than he has on previous occasions. We have not, unfortunately, the space to quote his speech in full, and can only give but a brief résumé of his address.

In his opening remarks, Sir Samuel referred to the fact that the two greatest Western powers of Europe, Italy and France, had both followed our example, realising the growing importance of aviation in the world, and had concentrated their efforts under a single Air Ministry. He then proceeded to outline the danger to Great Britain and the Empire from the air—the heart of the Empire being no longer an unapproachable island—and how we had to give our minds and our money to building up an Air Force and an organisation that was strong enough to deter any would-be enemy from an attack upon us.

To counterbalance the liability that the aeroplane had created by its destructive powers, Sir Samuel suggested that the fullest possible use of its unique power of mobility should be employed for effecting economies in the field of Imperial Defence, and for developing the communications and resources of a scattered Empire. He gave, as examples of how this can be done, the work accomplished by the R.A.F. in Iraq, where we had been able to reduce the garrison which, in 1921 comprised 33 Imperial battalions (costing over £20,000,000), to five R.A.F. squadrons, costing less than £2,000,000. A second instance was the Aden Protectorate, which was now garrisoned by the R.A.F.

Sir Samuel next dealt with the use of the aeroplane in destroying the great enemy of Imperial solidarity—distance. In this fight for distance, they had been advancing along four lines. They had been carrying out a series of pioneer Empire flights by the R.A.F., for the purpose of creating and organising long-distance air routes. Secondly, they were attempting to prove that commercial air services could be flown safely and punctually, and could eventually become self-supporting and independent of Government subsidies. Thirdly, they had been engaged upon the protracted and difficult enterprise of designing new types of airship for long-distance and non-stop flying services. Fourthly, they had been trying to stimulate an interest in the possibility of flying, and to encourage wherever they could the use of the aeroplane for civilising and not destructive purposes. Regarding the first, Sir Samuel gave some examples of the impressions and interest created by the R.A.F. machines during their progress.

Concerning the second, Sir Samuel stated that the Imperial Airways Co. had proved the safety and regularity of air travel and the data that had been accumulated during the existence of the company went to show that we were within a measurable distance of making commercial flying self-supporting and independent of subsidies.

Since the beginning of 1923, Imperial Airways had flown 3,000,000 miles without injury to a single passenger, and that its latest service, between Cairo and Basra—1,135 miles

over a desert that a few years ago took months to cross—often completed the flight in the course of a single day, already carried two-thirds of the total first-class mail, and in its first year of operation maintained a standard of 100 per cent. regularity. For the first six months of 1928, Imperial Airways had carried 56 per cent. more passengers than the company had carried a year ago.

It was hoped, he added, to have the weekly air service between London and India (Karachi) early next year—the formidable obstacles in the way of this service having now been removed. Another great trunk line for British aeroplanes was that between London and Cape Town, a line with great possibilities, but he was unable, at the moment, to say when or whether they will be able to afford a British subsidy. He was daily expecting detailed proposals that would enable him to judge whether or not it was possible to take the first steps towards its creation.

As regards the airship, Sir Samuel said—"Let us not forget the airship. Least of all let us judge the airship upon its record as an instrument of war in the unique conditions of 1914 to 1918. We believe that the airship can be made an invaluable instrument of peace, and that if we can successfully solve the problems that have surrounded it, we can use it for eliminating two-thirds of the time that is now spent in journeys between London and the capitals of the Empire. This is the justification of the programme under which, for the last three years, we have been engaged upon the design and construction of two great airships. We have studied the lessons of past experience. We have availed ourselves of scientific theory and practical experiment, and as a result we believe that the two airships that are nearing construction are far in advance of any airship hitherto built. The future alone can prove whether or not we are right. It is, however, worth noting that the new German Zeppelin, an airship as we believe far inferior in design and construction to our own, has succeeded in making a trans-Atlantic flight in the face of adverse weather conditions. As I say, we believe that we shall succeed with our experiment, and the Dominion Governments believe that we shall succeed with it, for they are co-operating with us, but whether we succeed or not, I am certain that any Government, or indeed any Minister, who works for the great ideal of Imperial unity, is bound to proceed with an experiment that carries with it possibilities of such incalculable value."

Referring to the fourth objective, Sir Samuel said that to-day there was an interest in flying matters that extended to every section of the population, and that almost absorbed the interest of the younger generation. He suggested that this was not a little due to the Light Aeroplane Clubs, which this country was the first to establish. It was, perhaps, also due to the fact that British manufacturers were the actual inventors of the light aeroplane, as used by those clubs.

In conclusion, Sir Samuel pointed out that the light aeroplane, such as the "Moth," cost little more than a moderate-sized car to buy and maintain, which showed that, given a chance, the British people will play as great a part in the air as they had played upon the land and the sea.

THE AUTOGIRO'S EUROPEAN TOUR

Successful Conclusion to "Windmill" Plane's 1,450 Miles

THE following is a report on the final stages—from October 3 to October 13—of the demonstration tour which has been carried out on the Continent with an Autogiro machine (Armstrong-Siddeley "Lynx") :—

October 3.—Machine left Paris, piloted by Mr. de la Cierva, and flew via St. Quentin and Valenciennes to Brussels, a distance of 180 miles.

October 4.—Mr. de la Cierva gave two demonstrations in Brussels, at which a large number of people were present. Two flights were made, Mr. de la Cierva's passengers being the Comte D'Autremont (President), and Mr. Jean Wolff (Secretary) of the Royal Aero Club de Belgique. These flights took place in the presence of General Deyes, aide-de-camp to the King. General Van Cronbrugge, the Spanish Ambassador, the Ambassador for the United States, Col. Sayer, M. Carton de Wiart, and other leaders of the

military and aeronautical world. Demonstrations were very successful and were enthusiastically received.

October 5.—In the morning, Mr. de la Cierva made a further flight in the presence of the Belgian Crown Prince and Princess Astrid. At 3 o'clock on the same day the machine was taken over by Mr. A. E. C. A. Rawson, who left the aerodrome at St. Evre at 3.15 accompanied by Mr. H. Blake, Secretary of the Cierva Autogiro Co., Ltd., as passenger. After flying over the Royal Palace in Brussels, the machine proceeded to Cologne, where it arrived at 4.35 (110 miles). At Cologne, the Autogiro was welcomed by the Ober-Bürgermeister and the Spanish, French and Belgian Consuls.

October 6.—Owing to very foggy weather, it was impossible for the Autogiro to fly to Leipzig via Cassel in accordance with the previously-arranged programme. The machine,

therefore, started from Cologne at 12.45 and flew to Dortmund arriving at 1.50 (60 miles). As the weather was extremely foggy, the Autogiro followed a Junkers' machine which guided it to Dortmund Aerodrome. Weather conditions being slightly better in the afternoon, the Autogiro left Dortmund at 4 o'clock and arrived at Hanover at 5.30 (105 miles).

October 7.—The Autogiro left Hanover at 10.30 a.m. and flew to Dessau arriving at 11.50 (105 miles). At Dessau, the flyers were received by the Director of the Junkers Werke: Dr. Schleissing, and a large assembly from the town. After a visit to Junkers' factory had been made, the machine took off again at 2.40 p.m., arriving in Berlin at 3.40 (60 miles). Mr. de la Cierwa met the machine on its arrival and a very enthusiastic and kind reception was given by Dr. Merkel, Director of the Luft Hansa and other officials at the Tempelhof. A crowd of about 5,000 people assembled to see the machine.

October 8.—Mr. de la Cierwa demonstrated the machine in the afternoon to Herr. Hentzen one of the engineers and pilots of the German Government, and Mr. Rawson also flew with Ernst Udet, the German Ace, who flew the machine himself and made two landings, and also with the official pilot of the German Government Research Committee.

October 9.—Mr. de la Cierwa flew the machine at the Tempelhof for 15 minutes with Herr Direktor Merkel as passenger. We should here like to say that the arrangements made on our behalf by the Luft Hansa in each of the towns visited in Germany could not have been exceeded in kindness and efficiency.

At 12.30 noon the machine departed from Berlin with Mr. Rawson as pilot and Mr. Blake as passenger, arriving at Magdeburg at 1.30 (75 miles). After filling up the machine left Magdeburg at 2.30 p.m., and arrived at Hanover at 3.30 p.m. (75 miles), leaving Hanover at 4.10 the flyers arrived at Münster at 5.50 (95 miles). At Münster a reception was given by the Ober-Bürgermeister, President and Vice-Presidents of the Aero Club and members of the Town Council. The flyers were the guests of the town and received a most enthusiastic welcome.

October 10.—The weather in the morning was extremely cloudy and visibility was very bad. Conditions improved towards noon and at 12.30 the Autogiro left Münster arriving at Sousterberg, the Military Aerodrome of Utrecht, at 2 o'clock (104 miles). Taking off again at 2.15, the Autogiro reached Rotterdam at 2.50 (35 miles). At Rotterdam, the Autogiro was received by Mynheer de Vogel, a Director of "Fokkers," and President of the Dutch Aeroclub, Col. Sacré, late head of the Dutch Air Force, Spanish Ambassador, Secretary of the Aero Club, and a large crowd of the public from Rotterdam and Amsterdam. Thirty military machines flew over from Sousterberg to see the demonstration of the Autogiro. Three demonstrations were given of 10 minutes each. The first to the test pilot of Messrs. "Fokker," the second to a prominent Amsterdam journalist, and the third to a test pilot of the Aeronautical Department of the Dutch Air

Ministry. The machine was most enthusiastically received and the demonstrations were highly successful.

October 11.—An extremely rainy and stormy day. A short demonstration was given to Mr. Cabos, Managing Director of Messrs. Burgerhout, at 10.30 a.m., after which no flying was done as the weather was impossible.

October 12.—Weather conditions having improved, the Autogiro left Rotterdam at 10.10, arriving at Brussels at 11 o'clock (70 miles). Starting from Brussels at 12 noon, the machine reached Valenciennes at 1.15 p.m. (55 miles). Although the weather was extremely good in Brussels very heavy fog was encountered on the French frontier, and it was some time before Mr. Rawson could locate the position of Valenciennes owing to the extremely bad visibility. After arriving at Valenciennes, flying was abandoned for the rest of the day as it was impossible to proceed to Paris. The flyers received a most kind welcome from M. Rebours, of Valenciennes, a former pilot of the French Air Force, and M. Dubled, Secretary of the Aero Club, who gave every hospitality and assistance in their power. In spite of the very bad weather two demonstrations were given at Valenciennes of 10 mins. each, one to M. Rebours, an ex-war pilot and prominent citizen of Valenciennes, who took over the controls in the air, and one to M. de Bour, district Manager of the Shell Company.

October 13.—Weather conditions were very good and the Autogiro was able to leave Valenciennes at 8 o'clock, arriving in Paris at 9.10 (110 miles). The machine was left at Le Bourget and the pilot and passenger returned to England on the same afternoon.

To sum up, the machine was extremely successful in every way, and the receptions accorded in France, Belgium, Germany and Holland were very gratifying and enthusiastic. The programme was carried out absolutely according to plan, except where weather conditions made it necessary to change the route at Leipzig and delay flying at Valenciennes.

With regard to the state of the machine, no trouble whatever was experienced with any of the component parts relating to the autogiro principle or to the machine itself. At Berlin a new set of interbracing rubbers were fitted as one of the rubbers showed slight signs of wear at Hanover. A new and reinforced shoe was fitted to the tail skid at Berlin as the great extent of tarmac at Tempelhof imposed considerable strain on the thin shoe fitted for ordinary aerodrome work. A new set of plugs was also fitted at Berlin as the engine was not giving full revs. Between Rotterdam and Brussels the engine started to splutter, but the difficulty was overcome in the air, enabling an ordinary landing to be made at Brussels, where the petrol filter and two plugs were cleaned. This trouble was attributed to bad petrol taken in at some point on the route and did not recur.

The total distance covered, taking into account flights over aerodromes for demonstration, was about 1,450 miles.

Official Move in Aerodrome Question

The Air Ministry has dispatched an official letter to many towns in this country pointing out the necessity of well-sited aerodromes which every town of importance will, sooner or later, find as essential as railway stations, etc. Incidentally it may be mentioned that the Air Ministry has long been assisting any authoritative municipal schemes for aerodromes with personal inspection and expert advice.

Cattewater Awakes

It was reported in our columns recently that Cattewater Air Station was being re-opened for use by the Royal Air Force. A new flight of seaplanes, probably Blackburn "Iris" (Rolls-Royce) flying-boats, is being formed there now under the command of Group Captain H. R. Busteed. On completion, the flight will fly to Basra, on the Persian Gulf, where a new Empire base is being established.

Flt.-Lt. Kinhead

MARSHAL of the Royal Air Force, Sir Hugh Trenchard, will unveil a memorial picture of the late Flt.-Lt. S. M. Kinhead at the Royal Air Force Club, Piccadilly, at 12.30 p.m., on November 5. Non-members of the Club who have subscribed to the memorial are invited to be present. The picture is an oil painting of the officer in his Service uniform. He was killed on March 12, whilst attempting to break the world's speed record at Calshot in a Supermarine-Napier S5.

Manufacturers Please Note

A COMMUNICATION from the British Legation at Berne reports that a local enquirer would be glad to receive offers

from British aircraft manufacturers for the supply of light aeroplanes. Further particulars can be obtained from the Department of Overseas Trade, 35, Old Queen Street, London, S.W.1. (Ref. A.X.7050.)

The Royal Air Force Memorial Fund

THE usual meeting of the Grants Sub-Committee of the Fund was held at Iddesleigh House, on October 18. Lieut-Commander H. E. Perrin was in the chair, and the other members of the committee present were:—Mrs. L. M. K. Pratt-Barlow, O.B.E., Mr. W. S. Field, Sqdr.-Ldr. Douglas Iron, O.B.E. The committee considered in all 16 cases, and made grants to the amount of £222 0s. 6d.

Tenth Royal Air Force Display

THE Air Ministry announces:—The tenth Royal Air Force display will be held at Hendon aerodrome on Saturday, July 13, 1929. This date, which is somewhat later than in previous years, has been decided upon so that visitors can conveniently, if they wish, combine visits to the display and to the International Aero Exhibition which opens at Olympia on July 16 next. Details of the display programme will be announced later.

A Correction

WE wish to draw attention to an error which appeared last week in the advertisement on p. xxvii, of Messrs. Burch's—the well-known tailors for R.A.F. uniforms, of 401, Strand. This was in the first item, where "trousers" should have read "Barathea Overalls"—trousers not now being part of regulation kit.

THE ROYAL AIR FORCE

London Gazette, October 23, 1928.
General Duties Branch

R. F. J. Strange is granted a short-service commn. as a Flying Officer for three years on active list (Sept. 29); Flying Officer C. U. G. Tristram is transferred to Reserve, Class A (Oct. 9); Flt.-Lt. F. Thomasson, D.F.C., M.M., is transferred to Reserve, Class B (Oct. 24); Flt.-Lt. W. G. L. Montagu-Douglas-Scott resigns his short-service commn. (Sept. 28).

The following Lieuts., R.N. Flying Officers, R.A.F., cease to be attached to R.A.F. on return to Naval duty:—H. Ditton (Aug. 2); J. I. Robertson (Oct. 16).

Flying Officer H. F. Gower is dismissed the Service by sentence of General Court-martial (Oct. 10).

Stores Branch

Sqdn. Leader W. J. Waddington, O.B.E., is placed on retired list (Oct. 19); the notification concerning Flying Officer O. W. T. Rogers, which appeared in the *Gazette* of Oct. 9 is cancelled.

RESERVE OF AIR FORCE OFFICERS

General Duties Branch

The following are granted commns. in Special Reserve as Pilot Officers on probation (Oct. 8):—J. K. Brew, D. W. Reid. Pilot Officer R. P. J. Radbourne is promoted to rank of Flying Officer (Oct. 20); Flt.-Lt. F. Thomasson D.F.C., M.M., is employed with the Regular Air Force for a period of two years (Oct. 24). The following Flying Officers relinquish their commns. on completion of service:—W. M. Miller (Oct. 13); A. G. Lambert (Oct. 21).

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

Accountant Branch

Squadron Leader E. W. Gregory, M.C., to R.A.F. Depot, Uxbridge, 15.10.28.
Flying Officer D. C. Stone, to Station H.Q., Cattewater, 8.10.28.

Medical Branch

Wing Commanders: A. E. Panter, B.A., to H.Q., Aden Command, 9.10.28.
H. W. Scott, M.B., B.A., to Air Ministry (Directorate of Med. Services), 9.10.28.

Squadron Leaders: R. A. G. Elliott, M.B., D.P.H., B.A., to Sch. of Tech. Training (Men), Manston, 29.10.28. T. C. St. C. Morton, M.D., M.R.C.P. D.P.H., D.T.M. and H., to H.Q., Air Defence of Great Britain, Uxbridge, 1.12.28.

Flight Lieutenants: A. Dickson, M.B., to R.A.F. Depot, Uxbridge, 19.9.28.
C. G. J. Nicholls, M.B., to Aircraft Depot, India, 13.9.28. E. A. Rice, M.B., to R.A.F. British Hospital, Aden, 9.10.28.

NOTICE TO GROUND ENGINEERS.

Avro Avian Type Aircraft: Bottom Main Plane Hinge Joint Fitting on Fuselage. (Drawing No. D. 979, Issue I)

1. The attention of ground engineers and all concerned is directed to the fact that cases have occurred where the above fitting has been found to be broken.

2. Ground engineers are to carry out, as a precautionary measure, frequent examination of this fitting in order to ascertain whether any cracks or signs of failure are developing.

3. Urgent action is being taken with a view to the replacement of the above by strengthened fittings of modified design and a further Notice to Ground Engineers will be issued in this connection.
(No. 3 of 1928)

PERSONALS

Married

PHILIP JONES, R.A.F., was married, on October 6, at Holy Rood, Crofton, to NOWELLE, elder daughter of Mr. and Mrs. G. M. BILLINGS, of Victoria, B.C., late of Shanghai.

The marriage took place on October 11, at St. John's Roman Catholic Church, Perth, of VISCOUNT KNOLLYS, D.F.C., only son of the late Viscount and Viscountess Knollys, of 20, Downshire Hill, N.W., and Miss MARGARET COATS, only daughter of Sir Stuart and Lady Coats, of Ballathie, Perthshire. Canon Malcolm officiated.

To be Married

An engagement is announced between Mr. LEONARD GLOVER BANKS, late R.A.F., younger son of Mr. and Mrs. C. H. Banks, of Clarendon Place, Leeds, and Miss DOROTHY BLACK, eldest daughter of Mr. and Mrs. Black, of Killochy, Huddersfield.

The engagement is announced, and the marriage will shortly take place, between Mr. JAMES RAMAGE ADDAMS, R.A.F., eldest son of Mrs. Inez Addams, of Shaws End, Esher, and Mrs. NETTIE THISTLETHWAYTE, of Larchfield, St. George's Hill, Weybridge.

Death

SQUADRON-LEADER WALTER HENRY PARK, M.C., D.F.C., R.A.F., who died at the Shorncliffe Military Hospital on October 19, after an operation, was in his 39th year. He was in command of the Royal Air Force station at Hawkinge.

Packing and Transport of Aircraft

THE packing of aircraft and their shipment to any part of the world is carried out by J. C. Mount and Co., Ltd., Stevenage Wharf, Fulham, S.W., who in this same capacity figured prominently as pioneers in the earliest days of flying. At the early meetings at Blackpool, Doncaster, and Bourne-mouth they undertook the safe transport of machines, which did not fly to compete so readily in those days, and when Bleriot flew the Channel for the first time in history in the year 1909 the company showed their appreciation of the feat by offering and carrying out the transport free of charge of Bleriot's machine back to France from Selfridge's, where it was exhibited after the flight. At their extensive wharfs along the Thames by Fulham which have a long river frontage and cover many acres of ground, they are able with their latest crane to ship aircraft or other loads well out in the river, thus enabling speedy shipment without hindrance of tides. They have shipped for many aircraft companies in the past and continue to do so. They have large storage space at Fulham and modern buildings equipped with various cranes. Mr. J. C. Mount himself was one of the founder-members of the Royal Aero Club.

PUBLICATIONS RECEIVED

Airworthiness Handbook for Civil Aircraft. Part I. Aeroplanes. Amendment List No. 2 to Air Publication 1208. September, 1928. H.M. Stationery Office, Kingsway, London, W.C.2.

Aeronautical Research Committee Reports and Memoranda: No. 1127 (Ae. 299).—Further Development of Autogyro Theory: Parts I and II. By C. N. H. Lock. March, 1927. Price 1s. 9d. net. No. 1159 (Ae. 324).—A Theoretical Estimate of the Pressure Gradient in a Wind Tunnel. By H. Glauert. April, 1928. Price 6d. net. H.M. Stationery Office, Kingsway, London, W.C.2.

AERONAUTICAL PATENT SPECIFICATIONS

(Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.)

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Published November 1, 1928

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- 20,008. P. H. V. WHITE. Aeroplane wings. (298,305.)
- 27,673. N. A. R. SANDBERG. Aeroplanes. (298,374.)

APPLIED FOR IN 1928

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- 11,093. DEUTSCHE WERKE KIEL AKT.-GES. Launching-devices for aeroplanes. (289,465.)
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